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OVERSIGHT TRIP TO CHINA AND HONG KONG

REPORT

TO THE

COMMITTEE ON SCIENCE AND TECHNOLOGY U.S. HOUSE OF REPRESENTATIVES

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*Ranking Republican Member.
**Serving on Committee on the Budget for 99th Congress.

LETTER OF TRANSMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, DC.

To all members, Committee on Science and Technology:

There is transmitted herewith a report on the Committee's oversight trip to China and Hong Kong, conducted between November 11–24, 1986.

In China, the delegation met with high ranking officials of the Chinese space program and visited launch and production facilities, which until recently have not been open to foreign visitors. We also met with government officials to discuss allegations that the Chinese government was using coersion and forced abortion to reduce the population growth rate. In addition to central government officials, the delegation met with local officials and educators and visited family planning training centers and clinics.

This report offers important information that runs counter to charges that the Chinese government employs a program of coerced abortion and infanticide to implement its family planning program. Also included are reports of meetings with Chinese officials and Embassy briefings on science policy, protection of endangered species, and the status of bilateral scientific accords.

We commend this report to your attention.

Sincerely,

JAMES H. SCHEUER,
Chairman, Subcommittee on Natural Resources, Agriculture Research and Environment.

MANUEL LUJAN, Jr.,
Ranking Republican Member, Committee on Science and Technology.

LETTER OF SUBMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
Washington, DC, December 19, 1986.

Hon. JAMES H. SCHEUER,
Chairman, Subcommittee on Natural Resources, Agriculture Research and Environment, Committee on Science and Technology, House of Representatives, Washington, DC.

Hon. MANUEL LUJAN, Jr.,
Ranking Republican Member, Committee on Science and Technology, House of Representatives, Washington, DC.

DEAR MESSRS. SCHEUER AND LUJAN: I am sending you this report on the Committee Oversight Trip conducted between November 11–24, 1986. This report includes highlights of the facility visits and summaries of discussions with U.S. and Chinese officials and a report on each.

In accordance with your instruction, we developed an agenda to meet with key Chinese officials in the fields of science and technology policy, space, and population and family planning. The schedule and oversight activities were designed to give Members a first hand opportunity to assess the status and performance of the Chinese in developing space technology, in competing with the U.S. in providing commercial launch services, in implementing its family planning program, and in cooperative activities under the various bilateral scientific accords.

The National People's Congress and our immediate host Hu Keshi, a member of the Standing Committee of the NPC, went to great lengths to arrange our agenda. The staff of the NPC, under the able leadership of Jiang Tianshui, provided extraordinary assistance and support to the delegation. State Department, Embassy and Counsel-General officials provided excellent professional and logistical support to this oversight activity. In addition we were fortunate in being accompanied—at no expense to the government—by Ms. Catherine Cameron and Mr. Robert Schule, experts in family planning and endangered species respectively.

Sincerely,

GEORGE S. KOPP,
Staff Director and Counsel, Subcommittee on Natural Resources, Agriculture Research and Environment.

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INTRODUCTION

The Committee on Science and Technology has as its jurisdiction all civilian research and development activities taking place in the United States. This responsibility covers such diverse areas as space, science and science policy, and environmental R&D.

Subsequent to the adjournment *sine die* of the 99th Congress, the Committee conducted an oversight trip to the People's Republic of China (PRC) and Hong Kong. The major areas for examination by the delegation were Chinese space activities (with particular emphasis on China's capacity for providing commercial launch services), the Chinese population and family planning programs, U.S. - Sino scientific accords and the efforts being taken by the PRC to protect endangered wildlife and to enforce the Convention on International Trade in Endangered Species. The Committee conducted meetings with various officials, organizations and institutions and made visits to several facilities.

The Committee was complemented by Members of other relevant Committees. Members participating in the China oversight trip were:

Committee on Science and Technology
James H. Scheuer (D-NY)
Manuel Lujan, Jr. (R-NM)

Committee on Foreign Affairs
Peter H. Kostmayer (D-PA)

Committee on Armed Services
Thomas Foglietta (D-PA)

Committee on Public Works
Gus Savage (D-IL)

Committee on Energy and Commerce
Jim D. Bates (D-CA)

Committee on Interior and Insular Affairs
Jim Moody (D-WI)

Committee on Government Operations
Edolphus Towns (D-NY)

Summary of Observations and Recommendations

I. Population and Family Planning

Observations and Conclusions:

1. The reality of China's population problem is inescapable. The sheer numbers of people, particularly in the cities, is one of the overwhelming impressions a visitor takes away from even a short trip to China. Perhaps even more sobering are the statistics. China's current population of just over a billion people represents twenty-two percent of the world's population. This twenty-two percent occupies roughly only 7 percent of the world's arable land. If China had not reduced its birthrate from the 1960 average of six children per family to its current 2.2 children per family, it would be facing a total population of two billion people by the year 2000 and an even more unimaginable 5.2 billion people by the year 2025. Instead, because of its reduction in birthrate, China is expected to have a total population of about 1.2 billion people in 2000, and 1.3 billion by 2025.

2. Coercion in family planning programs is not officially sanctioned in China. Instances of violation of this policy by local officials appear to have decreased significantly. Officials violating this policy are criticized, and may be fined or transferred; there are no direct parallels, however, between the Chinese system for dealing with such offenses and the more open U.S. legal system.

3. Strong governmental and peer pressure does exist urging a one-child family. Within the communal nature of Chinese society, individual rights in many areas take second place to responsibility to the larger family unit and the greater society. In this regard, the demands made on the individual in the interest of the society in the area of family planning are not unique, but rather fit into a broader system of collective responsibility.

4. Many people, particularly in urban areas, appear to accept the one-child policy as reasonable. The increasing availability of consumer goods, higher cost of living, and continuing housing shortages in the cities all constitute incentives to couples to limit their family size.

5. At the same time, increasing prosperity means that more families in rural areas can afford more than one child. There is great variation in policies among the provinces and regions of China, and substantial flexibility in implementation of policies regarding family size. In many parts of the country, officials recognize that people should be permitted to have two or more children and penalties are not enforced. Chinese officials admit that to reach the country's target population of about 1.2

billion people by the year 2000, it will not be necessary to implement the one-child policy. If China were to adopt a two-child policy, however, they fear that more people would have three or four children, instead of the current average of 2.2 children per couple.

6. Policies on when more than one child is allowed have been liberalized over the past two years; there is substantial variation in policies and attitudes among regions and between urban and rural areas. In mountainous regions and among minority people, the one-child policy does not apply. A great deal more flexibility has been officially introduced in other regions regarding instances of "practical difficulties" under which second children are officially allowed, including: when a first child is handicapped; in cases of second marriage if there are children from the previous marriage; if both parents are themselves single children; when a first child is female; if one brother cannot have children; and if the father is a disabled serviceman. Indeed, the national birth statistics for 1985 indicate that only 50 percent of the total births represent first children. A full 30 percent of births were the family's second child and 19.8 percent were third or higher births. The delegation was given indications that perhaps as early as 1990 and certainly by 2000, there will be substantial relaxation in the one-child policy.

7. The U.N. Fund for Population Activities (UNFPA) plays an important, but definitely marginal, role in China's family planning program. It is in no way involved in the management of the program. Its contributions in training (with virtually all advanced training in the United States), provision of international experts, and improvements in contraceptive technology are useful additions to, but not central elements of, the family planning program.

8. The U.S. position on UNFPA is a continuing irritant in U.S.-Chinese relations, viewed by the Chinese as interference in their internal affairs. While making this view clear, Chinese officials with whom the delegation met were unfailingly cordial and polite, and provided the delegation with a variety of information which had not previously been released.

Recommendations:

1. The United States should reconsider its policy of withholding contributions to the UNFPA, based on a straight forward interpretation of the terms in the law. U.S. law now prohibits U.S. contributions to an organization which

participates in the management of a program of coercive abortion or involuntary sterilization.[1] It is our belief that the Chinese family planning program is not coercive. While some may conclude otherwise, it is clear that UNFPA is not involved in the management of the Chinese family planning program and thus, continued cutoff of U.S. funds to UNFPA is not justified by the law or the facts.

2. If the determination based on conditions in current law cannot be changed, the United States should initiate consultation with other western donor nations to provide technical assistance to China outside of the UNFPA. Establishment of such a channel could remove a significant irritant in U.S.-Chinese relations, and the United States could once again contribute to the important activities UNFPA is carrying on in many other countries around the world.

II. Space Technology

Observations and Conclusions:

1. In recent years China has focused its efforts on advancing its world position in a number of technological areas. Nowhere is this clearer than in the space arena. Although a late entrant (China launched its first satellite in April, 1970, two-and-a-half months after Japan launched theirs), China is determined to catch up and assume a position of world leadership in space technology. As yet they have been unable to match this determination with sufficient financial resources; however, within the constraints of limited funding Chinese achievements have been impressive. Using facilities spartan by U.S. standards, China has had 19 successful launches including placing three communications satellites into geosynchronous orbits.

2. The Chinese have placed tremendous emphasis on the need to expand scientific and technological exchanges with more developed nations and are especially interested in participating in cooperative space programs with the United States, Europe, Canada, and Japan. On the other hand, Chinese officials indicated no interest in working with the USSR. They recognize their financial limitations; however, they believe they can be a contributor and want very much to be a respected partner in these endeavors.

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[1] The provision has also been interpreted as prohibiting any contributions to the UNFPA as long as that organization is involved in any activities in China.

3. Chinese officials expressed concern over the lack of progress in initiating joint programs with the U.S. While acknowledging the role that lack of funding plays, they are also somewhat critical of the U.S. posture with regard to sharing technology. They believe that space resources are the common wealth of all mankind and any benefits derived from space should be shared.

4. China is actively seeking foreign customers for launch services using the Long March 3 rocket. Officials stressed that China has no plans to steal satellite technology from their customers; they want only to provide a service and will allow the customer to control access to the satellite.

Recommendation:

Cooperative space programs can be a tool for strengthening U.S.-China relations and should be pursued. The United States should increase its efforts to identify potential areas of cooperation, recognizing the funding limitations and the need to protect legitimate national interests.

III. Science and Technology Protocols

Observations and Conclusions:

1. On January 31, 1979 the United States and China signed an Agreement on Cooperation in Science and Technology which sanctioned scientific exchanges and established a Joint Science and Technology Commission to review and oversee the government-to-government programs. Thus far, there are 27 bilateral protocols permitting scientific cooperation on a wide range of activities from high-energy physics to medicine and public health.

2. In large measure the bilateral cooperation in science and technology has functioned well. However, some American scientific teams have found the Chinese scientists less than forthcoming in information requests. In one of these cases, a group of scientists from the National Weather Service had their request for historical weather data denied on the basis of national security considerations.

3. Song Jian, State Councillor and Minister in charge of the State Science and Technology Commission, advised the delegation that most scientific exchanges are carried out smoothly, but occasionally unfortunate incidents do occur. He stated that it was not the intention of the Chinese to withhold information and he promised to investigate these instances.

Recommendation:

Despite certain isolated problems, the scientific exchanges

are of benefit to both countries and should be continued. Where problems do exist, however, responsible government officials should communicate their concerns to their Chinese counterparts in an open and frank manner.

IV. Protection of Endangered Species

Observations and Conclusions:

1. China is extremely concerned with the protection of indigenous endangered species (like the panda, river dolphin, and tiger), and has factored that concern into its development projects.

2. China is a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and according to Chinese officials, trade in rhinoceros horn is absolutely banned. Although there have been some illegal imports, Chinese officials advised that they have three security bureaus -- customs, quarantine and border police -- involved in enforcing the import prohibition.

3. Despite assurances to the contrary, rhino horn products are still openly sold in Beijing, bearing lables showing that city is the place of manufacture. In addition, the Chinese appear to cling to the traditional belief that rhino horn is effective in curing a wide variety of ailments ranging from high fever to nervous disorder.

4. In an effort to reduce the illicit trade in rhino horn, the government is promoting the use of substitute products such as antelope or water buffalo horns.

Recommendation:

The U. S. should assist China in its efforts to enforce CITES. Specifically, the U.S. should provide technical assistance in developing means to monitor and control the traffic of endangered species both into and out of China.

SUBJECT: Country Team Briefing, U.S. Embassy, Beijing

DATE: November 12, 1986

LOCATION: U.S. Embassy, Beijing, China

The delegation was briefed at the U.S. Embassy by: Ambassador Winston Lord; Peter Tomsen, Deputy Chief of Mission; Richard Johnson, Commercial Counselor; Gil Donahue, External Economic Section; Darryl Johnson, Political Counselor; Kenneth Chern, Science and Technology Counselor (acting); David Waters, Air Force Attache; and Sylvia Rifkin, Press Officer.

Ambassador Winston Lord provided an overview of the current political situation in China and recent developments in the areas of scientific cooperation, student exchange programs, and the Chinese commercial space program.

Bilateral Cooperation in Science and Technology

The United States maintains an extensive bilateral science and technology program with China, with 27 protocol agreements ranging from earthquake prediction to cancer research. These protocols have accomplished a great deal in terms of expanding and strengthening the foundations of the American-Sino relationship. However, there are a few areas in which the U.S. would welcome more reciprocity from the PRC. Two examples were cited:

> A protocol negotiation between a U.S. interagency group led by Dr. Richard E. Hallgren, Director of the National Weather Service, and the Chinese Meteorological Administration was one such example. The American side was disappointed in a failure by the Chinese to furnish certain historical meteorological records which, it was hoped, would help American meteorologists predict worldwide weather trends. The perception of personnel from the National Oceanic and Atmospheric Administration and the National Weather Service was that, over the five years of the protocol, the Americans had furnished more information than they received from the Chinese.
>
> That same perception was shared by a team from the United States Geological Survey (USGS), led by Lowell E. Starr, Chief of National Mapping, following negotiations conducted earlier this year over protocol developments in mapping and surveying.

These difficulties were characterized as bureaucratic in nature and not a matter of Chinese policy. There appears to be some reticence on the part of the Chinese to provide data without clearing it at many levels, often in different agencies. It was also felt that this perception is an inevitable function of the relatively advanced stage of science in the United States and the fact that Chinese science is lagging behind the U.S. in many fields. On balance, however, American interests are well served through these protocol agreements.

Student Exchange Programs

With respect to student exchange programs, the 15,000 Chinese studying in the United States represent one-half of the total number of students China sends abroad. Approximately one-half of the Chinese studying in the United States are sponsored by the PRC; the remainder are paid for either through scholarships at the U.S. universities or by overseas relatives and friends. There are a few direct exchange programs which are conducted between American and Chinese universities, including the Center for Chinese and American Studies in Nanjing which began operation this year as a cooperative venture between Johns Hopkins University and Nanjing University (a discussion of this program appears later in this report).

Fulbright Scholars are the only Americans studying in China at the expense of the U.S. Government. The U.S. has only a few hundred students studying in China at the present time, principally because there are relatively few American students whose Chinese language skills are sufficient to allow them to study subjects in Chinese.

Commercial Space Program

In terms of their commercial space program, the Chinese are hoping to capitalize on the demand, at least in the short term, for commercial launch services created by the Ariane and Challenger accidents. It was noted that the Chinese are not acting in a purely opportunistic sense; the Director of the Kennedy Space Flight Center (R. G. Smith) was invited to visit the Xichang launch site in October, 1985 -- a full three months before the Challenger accident. But for reasons of national prestige as well as financial advantage, providing commercial launch services is very important to the Chinese.

It was stressed that the United States is not opposed to the idea of China placing Western communication satellites into orbit as long as U.S. technology transfer concerns are met. Western Union, for example, has signed a Chinese launch contract and is waiting for approval by the U.S. Government. While that contract appears to fit the framework of security and technology protection established by the U.S. Government, each contract will have to be considered on a case-by-case basis.

Doubts remain, however, about the potential for the Chinese commercial space program. The Long March 3 is believed to be capable of boosting a payload of 1400 kilograms (approximately 1.5 tons) into orbit. The Chinese are engaged in the development of a more powerful launch vehicle, but the status of that effort is unknown. Thus, without the capability of launching larger payloads such as the Westar and Palypa satellites, the Chinese do not appear to pose a long-term challenge to the United States in competitive terms.

Subject: **Meeting with the Ministry of Astronautics**

Date: **November 12, 1986**

Location: **Beijing, China**

Principal officials who met with the delegation were: Liu Jiyuan, Vice Minister, Ministry of Astronautics and Yu Qiao, Director, Astronautics Materials Research Institute.

BACKGROUND

China launched their first satellite in April 1970, becoming the fifth nation to develop the technology to participate in the space race. Since that time they have successfully launched 19 satellites with Long March launch vehicles. The Long March 3 (CZ-3), introduced in 1984, is a 3-stage rocket incorporating a cryogenic third stage and is capable of placing a 1400 kg (approx 1.5 tons) payload into a geosynchronous transfer orbit. In 1986, the Ministry of Astronautics offered its launch services to other nations; since that time, the China Great Wall Industry Corp. has signed launch service agreements with the Swedish Space Corporation and two U.S. firms, Western Union and Teresat Corporation. Teresat, a New York firm, hopes to acquire the two commercial satellites recovered by the Shuttle crew in 1985 from the insurance underwriter who currently owns the satellites.

The Chinese have stated they can accomplish 10-12 launches per year with present capability and are actively pursuing outside business. Before a U.S. firm can use the Chinese launch service the State Department Office of Munition Control must provide an export license for the U.S. satellite. Although no such licenses have yet been granted, the State Department has indicated that they have no objection in principle to U.S. firms using Chinese launch vehicles. However, issues such as potential technology transfer need to be resolved.

DISCUSSION

Liu Jiyuan, Vice Minister, Ministry of Astronautics and Yu Qiao, Director, Astronautics Materials Research Institute, briefed the delegation on the funding and status of China's Space Program. China began research and design in the late 50's and built their first satellite in 1960. On March 3, 1960, using the Long March, they launched their first successful experimental satellite, which remained in orbit for 8 years, exceeding the design. In 1975, China launched its first recoverable satellite with Long March 2, described as a two-stage highly reliable liquid propelled rocket. Since that time they have launched 8 more satellites with the Long March 2 and all have been

successfully recovered. In 1981, China launched 3 space physics exploratory satellites and in 1984 and 1986 placed 3 communication satellites in geostationary orbits. To date, China has successfully orbited 19 different varieties of satellites using the three Long March vehicles. They claim to have had only one failure in 9 attempts with the Long March 2; the remaining eight were all successful and the satellites were successfully recovered.

The Long March 2 is capable of placing a 2-1/2 ton payload into a low earth orbit and the Long March 3, which consists of the same first two stages as the Long March 2 with a cryogenic 3rd stage added, can put a 1.4 ton (metric tons) communication satellite into a geosynchronous transfer orbit (GTO). The Chinese claim the same high reliability for the Long March 3 since it is built on the plan of the Long March 2, and said this is the vehicle they are offering for launch services.

Chinese plans to build on their two decades of experience by increasing their payload capability and by designing weather satellites for both sun-synchronous and earth-synchronous orbits and earth resources satellites for various purposes. Liu stressed that until now they have developed their own technology, including their trajectory measurement instrumentation, but now they are seeking cooperative ventures with the United States, Europe, Japan, and Canada.

Following the briefing, an 18-minute video tape was presented which showed some of China's past accomplishments in space including the 1970 launching of a dog in space, the successful recovery of a remote sensing satellite, and the launching of a communication satellite which provides Tibet with television programming from Beijing.

Mr. Lujan expressed the opinion that space was not only a new frontier, but also a good international tool to strengthen relations between nations. He briefed the Chinese on some of the goals of the U.S. space program (e.g. Space Station and Aerospace Plane) and suggested possible ways the Chinese might be able to participate in joint ventures, such as providing an astronaut for future shuttle missions or participating in the Space Station.

The Chinese are very interested in cooperation with the United States, but are concerned that a program such as the Space Station requires a large investment and is probably not affordable. Therefore, they plan to concentrate on preliminary research at this time.

China is very interested in space exploration for peaceful purposes. They spent approximately 5 billion Yuan ($1.35 billion) from 1980 thru 1985 and plan to commit 6 billion Yuan, $1.6

billion, over the next 5 years. They believe that space resources are the common wealth of all mankind and any benefits to be derived for peaceful purposes should be shared. The argument is analogous to that made by many Third World Nations with respect to resources of the oceans, as reflected in the terms of the Law of the Sea Treaty. The Chinese were willing to discuss both the Space Station and the Aerospace Plane but expressed the feeling that it was ultimately up to the United States government to demonstrate its willingness to cooperate with China in high technology. Liu said that cooperation between NASA and the Chinese Ministry of Astronautics hasn't advanced much for different reasons, and reminded the delegation that China is very limited in funding.

Mr. Lujan acknowledged the difficulties but expressed the view that scientists usually prefer an open policy regarding exchange of information and it is the politicians who exercise restraint. He suggested that the two nations continue to discuss these issues and try to get around these difficulties.

Mr. Lujan asked about Chinese plans for the future. Liu stated that the Chinese currently plan 12-14 launches per year at two sites and plan to upgrade their Xichang facility to make it more suitable for international cooperation; the living conditions are not good. Mr. Lujan asked about pricing policy and expressed concern that the Chinese could kill the United States private ELV (Expendable Launch Vehicle) industry with a heavily subsidized program. Chinese officials stated that they charge the incremental cost of a launch but do not plan to amortize the cost of the infrastructure. It is noteworthy that Committee Members have had similar discussions regarding ELV subsidies with representatives of the European Space Agency.

In response to questions regarding cooperation with the Soviets, the Chinese stated that the Soviets had discussed the matter with them but that the Chinese firmly rejected any suggestions of a cooperative program.

The meeting closed with a request by the Chinese that the U.S. delegation pass on the information to the appropriate officials that they are not trying to steal U.S. technology through their efforts to launch satellites; China only need know about the mechanical and electrical interfaces, and the satellite technology can remain a secret. Mr. Lujan stated that he didn't believe there was any particular mistrust, although, certain procedures need to be followed in dealing with national security issues.

SUBJECT: Working talks with Education, Science, Culture and Public Health Committee, National People's Congress

DATE: November 12, 1986

LOCATION: Great Hall of the People

Principal officials who met with the delegation were: Hu Keshi, Member of Standing Committee of NPC and Vice Chairman of Education, Science, Culture and Public Health Committee; Wang Ganchang, Member of Standing Committee of NPC, Member of the Education, Science, Culture and Public Health Committee. Vice Director of Science and Technology Commission, Ministry of Nuclear Industry; Xu Cixin, Member of Standing Committee of NPC, Member of Education, Science, Culture and Public Health Committee, Chairman of China Population Society; and Wu Zhonghua, Member of Standing Committee, and Education, Science, Culture and Public Health Committee-NPC, Director of Institute of Engineering Thermophysics, Chinese Academy of Science.

Hu Keshi, Vice Chairman of the Committee, opened the talks with remarks noting the good relations that have existed between the two countries since diplomatic relations were restored between the U.S. and China in 1979. The improvement in these relations, he said, has coincided with the economic growth the country has enjoyed since 1978 and China's evolution into a "socialistic democracy." He said that since 1982, under China's new constitution, the National People's Congress has become an important political organ of the State, with powers of the legislation, oversight of government administration and appointment of government officials. Hu emphasized that the "system of Congress" is still being perfected. The Party maintains authority to develop policy which is then given to the NPC for drafting into legislation. The NPC ordinarily follows Party policy. Of the six committees of the NPC, Hu said that the Education, Science, Culture and Public Health Committee was the largest, and one of the most active, having recently passed laws in the areas of food, sanitation, drugs and compulsory education.

Hu also reviewed economic growth in China, noting that the NPC had recently approved the seventh 5-Year plan, which calls for economic growth of six to seven percent per year. During the sixth 5-Year plan, Hu said that the quality of life had improved for the average Chinese, with per capita income increasing for peasants by 13.5 percent and workers by 6.5 percent. The GNP rose during the sixth 5-Year plan by 11 percent per year.

Most of the meeting focused on family planning issues with wide participation on both sides. Mr. Hu commented at length on the implications of China's population and family planning program. He noted that China is the world's most populous country, and

that China's population and growth rate affect all aspects of the country's development. China's new constitution states that all couples have a duty to practice family planning. China's policy is aimed at reducing the quantity and raising the quality of the population. He stressed the following three points:

1. China's population policy is developed from the basic facts of the size of the population, the resources and land base, and the backward state of the economy. He noted that China's 1.04 billion people, 22 percent of the world's population, live on 7 percent of the world's arable land. (Ninety percent of China's population lives in the eastern half of the country.) In order for China to develop its economy, catch up with other nations, and improve the life of its people, it is necessary to control its rate of population growth.

2. China did not begin to pay serious attention to this issue until the 1970's. Since 1980, the policy has advocated one couple -- one child, late marriage, delay of first birth, and the raising of healthy children. The current goal is to reach a population total around 1.2 billion people by the year 2000.

   Under the sixth 5-Year plan, 24 million couples had a single child, the birth rate decreased, and living standards improved. Mr. Hu observed that this program could not have succeeded without the voluntary support of the people. He denied that coercion is a part of China's family planning program, and said it would be impossible to force millions of women to use family planning. He stated that such allegations of human rights abuses are a direct attack on China.

3. Control of population growth is an arduous task. Efforts cannot be relaxed during the next 15 years, because during that time, 200 million couples will enter the childbearing years. Without family planning, the population could reach 1.5 billion by the end of the century. However, implementation of this policy must be pragmatic, emphasizing reasonableness and voluntarism, and recognizing that in the rural areas, many couples continue to have two or more children.

In response to questions on how national policy is developed, Mr. Hu replied that targets and plans are discussed by the National People's Congress in response to the ideas and wishes of the masses. He noted that shortcomings and problems have occurred in the development of family planning policy; in particular that in the rural areas many couples continue to want more than one child. Therefore, the policy, while it stresses one couple -- one child, is actually based on reaching a target of 1.7 children per couple.

Mr. Qian Xinzhong, former minister of the State Family Planning Commission, added that family planning policy has not been formulated all at once, but has been refined during implementation. Mr. Xu Dixin, Chairman of the China Population Society, agreed, stating that population policy formulation has gone through a "tortuous" route. The need for family planning wasn't even recognized by the government until the 1970's. He noted that over the past few years, peoples' concepts of desired family size has changed. Improvements in living standards since 1978 contribute toward people's favorable attitudes toward smallar families. These changes in attitude are important elements in the acceptance of family planning to date.

Regarding the accusations of coercion, Mr. Xu observed that for 1985, 50.2 percent of births were first births, second birth rate was 30 percent, and that third and higher births nationally were 19.8 percent. In his view, it would be impossible to carry out a requirement that all couples have only one child.

Vice-Chairman Hu emphasized that China's policy advocates, but does not absolutely demand, that couples have only one child. He stated that some cases of coercion did occur in the initial stages of implementation of the one-child policy, but that such cases are extremely rare now. He pointed out that instances of prostitution and child abuse in the United States are not regarded as examples of official U.S. policy; neither should cases of coercion in China be confused with official policy.

Mrs. Hu Dehua, Secretary of the National Women's Association, stated that women's organizations are opposed to coercion. If instances of coercion are discovered, they are reported to local authorities. Women's organizations play an important role in educatiog women about the individual and collective need for family planning. She noted that in urban areas the majority of couples want only one child. In more remote areas, couples who want two children should be allowed to have them, but are advised to space their births.

Vice-Chairman Hu explained briefly China's decentralized system of planning for economic development, which is related to the economic, social, demographic and other conditions which vary from region to region. Family planning requirements are generally more flexible in rural areas. Implementation policies also vary; generally, couples pay a fine or fee if they have additional children. The National People's Congress is currently discussing legislation that would tax couples with large families.

SUBJECT: Meeting with the State Family Planning Commission

DATE: November 13, 1986

LOCATION: Beijing, China

Principal officials who met with the delegation were: Wang Wei, Minister of Family Planning, and Madame Peng Yu, Vice-Minister.

The briefing began with a film describing China's family planning program and an introductory summary from Madame Peng. These statements emphasized the Chinese position regarding the impact of the country's large population on its limited resource base, and the demands which rapid growth -- estimated at 34 births a minute, or 49,000 births a day -- entails in the provision of food, education, housing, and employment.

A summary of the one-child policy was reiterated, with reference to exceptions made in some cases particularly in rural areas. In addition, the role of family planning workers in dealing with infertility problems and helping to assure the birth and development of healthy children was also stressed, as was concern regarding provision of pensions and care, "homes of respect," for the aged.

China's family planning program was described as decentralized. In some provinces, such as Beijing, Shanghai, Tianjin, and Jiansu, couples are not penalized if they have a second child in cases where the family faces "practical difficulties," which include both parents being single children or the presence of handicapped parents or children. In mountainous areas, as in Shaanxi Province, the policy is described as very flexible -- everyone may have two children. In hilly areas of the province, broad conditions exist regarding non-penalized second births, while in the plains, couples are encouraged to have only one child. Other provinces are carrying out experiments such as allowing every couple to have two births, but promoting late marriage, delayed births, and spacing of births.

In a follow-up session, the delegation was given a copy of a summary of Document #7, the key document which guides family planning policy. A copy of the translation of that summary is appended to this report. The term "practical difficulties" used in the briefing and also in Document #7 was explained to mean allowing permission for second births as follows:

a. Urban areas: if the first child is handicapped; if the couple adopts and then gets pregnant; in instances of a second marriage, even if one or both partners already has a child; if both partners are single children.

b. Rural areas: all of the above, as well as such cases as instances when a brother cannot have a child; when the husband marries into the wife's family; if the husband is a disabled serviceman. In sparsely populated areas, mountainous areas, islands, or regions where the main occupation is mining, a second child is automatically permitted when the first child is a girl.

(In addition, regardless of the location or personal situation, a second child is permitted if only a small number of couples have requested permission.)

The national population plan is based on local plans, with each province reporting twice a year on its population growth. General policy is to combine government guidance with the masses "voluntariness," which means that people participate in the development of plans regarding births. Government guidance entails provision of information, dissemination of population theories, and the distribution of contraceptives. These guidance policies emphasize education and prohibit any form of coercion. Enforcement includes a variety of economic incentives for one-child families and disincentives for larger families. These incentives and disincentives are established locally, and generally include priorities in housing, jobs, retirement benefits, and health benefits for one-child families, and fines of up to 10 percent of income for additional births.

Minister Wang observed that China is a large country and that problems are inevitable. Official policy, including documents and directives issued by the government, opposes coercion, and the State Family Planning Commission works to prevent problems by improving the working style of family planning officials through improved training. Individuals can report violations and make complaints at the county family planning commission. He noted that instances of coercion have decreased substantially since 1984 as local officials have become better educated to respect the feelings of the people, so that cases of overzealousness have diminished.

In response to a question on whether coercion is against the law, Minister Wang replied that in China coercion means that a person is ordered to do something he or she does not agree to do. When, in spite of government opposition, instances of coercion do occur, they are handled basically in two ways: 1) if the worker had good intentions, but was advocating too strongly, that worker is criticized and educated to improve his or her style; 2) in cases of serious violation, such as use of physical force, the official is punished, with punishments including fines, loss of jobs, and referral to courts.

Although the officials were clearly concerned that documentation regarding such punishment should, (but might not be) understood in the context of Chinese society and culture, they did offer one

example of how cases of coercion is dealt with. In 1983, a district deputy chief in Pingdon County, Guizhou Province, was found guilty of threatening women in order to persuade them to accept sterilization. He was dismissed from his post and the women in question received official apologies.

In general, Minister Wang explained, violators are criticized privately, a serious sanction in Chinese society, but rarely are punished publically. Due to the great loss of face should the name of the violator be made public, such as in a newspaper, the person, it was claimed, might be driven to suicide.

SUBJECT: Meeting with the Beijing Office of the U.N. Fund for Population Activities (UNFPA)

DATE: November 13, 1986

LOCATION: Beijing, China

Officials of UNFPA who met with the delegation were: Prad Laquian, Coordinator; and Janet Vail, Program Officer.

Mr. Laquian briefly reviewed UNFPA's program in China. A copy of the summary of UNFPA projects underway in China is attached. Because of project schedules, UNFPA had intended to spend $17 million of its five-year $50 million program for China in 1986. However, budget shortfalls, due in part to the U.S. decision not to provide funds to UNFPA in fiscal year 1986, mean that only $8.6 million is allocated for the year. This shortfall has an obvious impact on project schedules -- for example, equipment cannot be provided for the contraceptive production facility which has already been constructed and foreign training has had to be postponed.

UNFPA employs three full-time professional staff in China to administer its program. In contrast, the Chinese State Family Planning Commission has approximately 200,000 full-time cadres, as well as a volunteer network, and has a budget of approximately $1 billion. Thus, it was difficult for UNFPA staff in Beijing to understand how the U.S. Government could determine that UNFPA is involved in the "management" of China's family planning program. The UNFPA staff also protested the notion that coercion is officially sanctioned in China's program. Mr. Laquian also discussed what he viewed as relaxation in the implementation of the one-child norm, even though the policy has not officially changed.

A key area of UNFPA assistance in China is support for improving the quality and quantity of contraceptives. For example, the most commonly used contraceptive device in China is the steel ring intra-uterine device (IUD), which has a 14.3 percent expulsion rate, 70 percent of which occurs in the first three months. It is considered to be a much less safe and effective contraceptive than the Copper-T IUD, which is now being produced in China with UNFPA assistance. It is estimated that at least half of the abortions in China are a result of IUD failures.

Supply and distribution of contraceptives presents continuing logistical problems in China. In Mr. Laquian's view, the seeming popularity of the steel ring IUD, in spite of its high failure rate is due in large part to its availability. Demand for the Copper-T IUD exceeds supply. Because of production problems, birth control pills are also not available in sufficient numbers.

The Chinese have not succeeded in locally producing an effective injectible contraceptive. Trials are underway in China of the contraceptive implant NORPLANT and the country is considering local production of this method if trials continue to show positive results.

Mr. Laquian noted that it was his understanding that discussions concerning the U.S. contribution to UNFPA were held in New York, involving the United States, UNFPA, and the Chinese delegation to the United Nations. In his view, it would not be realistic to ask UNFPA to limit its program in China to such matters as maternal and child health or aging questions, as other U.N. agencies have expertise in these areas and would be the natural conduits for this kind of assistance.

U.S. law prohibits U.S. contributions to organizations involved in the management of a program of coercive abortion or involuntary sterilization. On the basis of this provision, the U.S. Agency for International Development withheld a final $10 million tranche of the U.S. contribution to UNFPA in fiscal year 1985 and determined not to make any contribution in fiscal year 1986.

联合国人口活动基金驻华代表处
UNITED NATIONS FUND FOR POPULATION ACTIVITIES IN CHINA

The United Nations in China

THE UNITED NATIONS FUND FOR POPULATION ACTIVITIES

The first cycle programme of UNFPA in China (1980-84) allocated $50 million. Another $50 million was approved for the second cycle (1985-89).

During the first cycle, support for China's first modern census took up most of UNFPA funds. In the second cycle, emphasis has shifted to contraceptive production, followed by publicity and education, maternal and child health/family planning, contraceptive research, information, education and communication, and assistance to special groups, such as the aged.

Contraceptive Production

China produces all contraceptives needed in the country. UNFPA has assisted in buying factory equipment to produce enough contraceptive pills for 12.5 million women per year, and injectibles for 2.5 million women. Two IUD factories assisted by UNFPA can annually produce 3.5 million Copper Ts and three plants produce more than 550 million condoms. The UNFPA is also helping in improving quality control of Chinese contraceptives and improving the distribution of contraceptives.

Communication and Education

The Chinese family planning programme is based on voluntary compliance based on accurate information. The UNFPA has assisted in setting up three national family planning information centres and provincial level centres. Audio-visual equipment as well as training has been included in the programme. Population education classes have been opened to benefit about 45 million secondary school students and similar programmes have been offered in peasant schools.

Training in Population Management

The family planning effort in China involves more than 200,000 full-time workers. UNFPA provides assistance to the training of family planning administrators at a national school in Nanjing and another school for family planning professionals in Chengdu. In addition, training programmes both locally and abroad are provided to family planning personnel.

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Demographic Training and Research

The 1982 Census generated voluminous data on China's population. To help analyse the data, the UNFPA is assisting 22 population research institutes in as many universities. In addition, eight institutes under the China Academy for Social Sciences are also being assisted. At least 20 fellowships for long term studies abroad are provided by UNFPA for faculty members from key universities each year.

Family Planning Research

China has taken a leading role in developing contraceptives and the UNFPA is assisting research institutes in Beijing, Shanghai, Tianjin, Guangzhou and Chengdu with the technical assistance of the World Health Organization in Geneva. Testing of new contraceptives is going on in all these centres. Promising family planning techniques, chemical contraceptives, reversible sterilization and immunization are being pursued. The UNFPA has provided advanced research equipment for these centres, offered training opportunities abroad, and facilitated the exchange of scientific data with other researchers in other parts of the world.

Basic Data Collection and Dissemination

Although the bulk of China's census work has been done, UNFPA continues to assist in the analysis of census results as well as the printing and dissemination of population reports. The State Statistical Bureau continues to carry out work on the census data even as it plans specialized census work on agriculture, housing and other fields.

Maternal and Child Health/Family Planning

China has an excellent network of health care delivery and UNFPA is assisting with equipment, training, technical assistance and improved management for better health care. The World Health Organization is helping China with hospital and clinic-based delivery systems with UNFPA support. In addition, training and technical assistance is also provided to improve China's nation-wide preventive health and community services system.

Policy Research

UNFPA is assisting the State Planning Commission to strengthen integration of population into the development planning process. In addition, because of the considerable impact of the one-child family policy on the aged, the role of the elderly in China requires systematic research and analysis.

Financial Allocations in 1985 - 1986

Programme Areas	1985	1986
Contraceptive Production	1,509,354	3,210,385
Communication and Education	2,604,148	2,043,502
Training in Population Management	1,292,060	721,288
Demographic Training and Research	1,201,112	1,070,338
Family Planning Research	1,141,591	750,000
Basic Data Collection/Dissemination	893,812	618,260
MCH/FP	1,713,688	919,396
Policy Research	168,528	186,283
	10,524,293	9,519,452

SUBJECT: Visit to the Beijing Rocket Engine Test Center

DATE: November 13, 1986

LOCATION: Near Beijing, China

On Thursday, November 13, the delegation visited the Beijing Rocket Engine Test Center, which is located about a one hour and fifteen minute drive to the southwest of the city.

The delegation was met by officials representing the Test Center, the Ministry of Astronautics, and the Committee on Education, Science, Culture and Public Health of the National People's Congress. Mr. Xia Zhaoxiong, the Director of the Test Center, served as the spokesman for the Chinese side, and Mr. Lujan served as the spokesman for the American side.

Mr. Xia noted that the Test Center was established in 1958 and had done all of the testing for the Chinese space program since that time. They have worked on the development of the engines for the Long March 1, 2, and 3 launch vehicles.

The Test Center was established in the 1958 to test various sorts of rocket engines, but since 1968 has been involved in the testing of rocket engines for satellite launch vehicles. The Test Station employs more than 1,600 engineers and technicians and has five test stands, four laboratories, and a number of workshops.

The Chinese are quite proud of their accomplishments in a space program which they describe as evolutionary. For example, the launch capacity of the Long March 1 was 500 Kilograms into a 300-Kilometer orbit. The Long March 2 was able to launch a 2.5-metric ton payload into a 200 to 400 km orbit. The Long March 3 is capable of placing 1,400 kg into a Geostationary Transfer Orbit. There is a plan to further increase the payload capacity of the LM-3, and the Chinese may be developing a Long March 4.

The delegation was impressed with the obvious Chinese determination to enter the international commercial marketplace. The Rocket Engine Test Center is already doing some preliminary work in altering test stands in preparation for the planned Chinese launch of a communications satellite for Western Union in March of 1988.

SUBJECT: Meeting with Chinese Academy of Sciences (CAS) on Endangered Species

DATE: November 13, 1986

LOCATION: Beijing, China

Codel Scheuer met November 13 with Zhou Guangzhao, Vice President of the Chinese Academy of Sciences (CAS), and several eminent Chinese scientists to discuss protection of endangered species, particularly the rhinoceros.

Vice President Zhou welcomed the Codel and explained that the CAS now emphasized applied research (with 50 percent of its budget), although it will continue its efforts in basic research (25 percent of budget) and development (25 percent). He noted that last year China established a National Science Foundation, which is independent from the CAS and which supports basic research both in CAS and in Chinese universities. Zhou pointed out that CAS's budget is mainly from government sources, but that it has been encouraged to obtain increased support from industry through contracts establishing "scientific production entities." Zhou said that CAS will be more "market-oriented" in the future.

Congressman Scheuer noted that China had made much progress in environmental protection since his last visit four years ago. He pointed out that many scientific protocols had been established by the two countries in the seven years since the science and technology agreement was signed, and he mentioned that a new protocol -- on forestry-- is to be signed next week.

The Congressman then discussed the problem of the rhinoceros. He noted that China bears some responsibility for perpetuating world rhino trade. Mr. Scheuer pointed out that the rhino has been in existence for 60 million years, but that "during our watch" it has been threatened with exinction. He said that in 1970, there were 70,000 rhinos, but now there may be no more than 11,000 -- an 80 percent reduction in 16 years. He said that this species will be wiped off the earth unless we do something to prevent it. He noted that the animal has only one serious predator -- man -- and that we are hunting the animal into extinction.

Congressman Scheuer said that China is playing a role in the process of extinction by providing a marketplace for rhino products. He said that in China there was still trade in powdered rhino horn, where it is sold as medicinal products to cure fever. He noted that Southeast Asian countries are now using cow horns and he hoped that China would also consider such substitutes to assist international efforts in ending the trade in rhino products. The Congressman said that poachers only kill the animal because there is a demand for the horn.

Congressman Scheuer referred to recent Congressional hearings and informal contacts which indicated that Singapore is now cooperating with international efforts to halt trade in rhino products. He hoped that China would join such efforts, arguing that we all share the same planet and are interdependent.

Mr. Robert Schule, a Trustee of Rhino Rescue Inc. and a government relations consultant, described the rhino's African habitat, noting that there is a dispute over the current population of the animal, with some numbers as low as 8,500. He said that the remaining population in some African countries is too small to be sustained. Since the animal has long gestation and lactation periods, there may not be enough time to retain the current population level, much less increase it. Futhermore, the animal is fairly easily approached, as it has no natural predators and senses no fear of man.

Vice President Zhou said that Chinese scientists are ready to assist efforts to save the rhino and other endangered species. Professor Wang, from the Institute of Zoology, mentioned several endangered species which China is helping to save, including the river dolphin, the panda and the tiger. He said that China, in accordance with the endangered species convention, is doing its best to control the importation of rhino horns. Dr. Qing Jianhua from the Ministry of Forestry, said that during 1970-80 China had imported about 300 kilograms of rhino horns, but that all such imports had been prohibited since 1984. He admitted, however, that there have been some illegal imports, including 1.1 kilograms imported during July, which were seized by Chinese customs. He noted that the rhino horn had come from Central Africa. He said that although the horn was a staple in traditional Chinese medicine, it is now been substituted by buffalo horn and he claimed that rhino horn products are not currently available on the market in China.

Dr. Qing said that three Chinese securing bureaus -- customs, quartine and border police -- are involved in policing China's import prohibition. He said that all imports are controlled unless they are accompanied by a Ministry of Forestry permit, and unauthorized importation is considered a crime which is strictly punished.

Mr. Schule commented that the U.S. welcomes Chinese efforts to control the market for the rhino horn and that he hopes such efforts will not be in vain before the animal is hunted into extinction. Mr. Schule has organized Rhino Rescue USA, a non-profit organization set up to raise money to build and maintain preserves in hopes of preventing the animal's extinction. Vice President Zhou said that China would support this effort.

Congressman Scheuer stated that it was his understanding there was still an old stock of rhino horns in China used for medicines and asked when it would be exhausted. Mr. Cheng Erjin responded

that the Chinese were not aware of such a stock of rhino horns. He noted that one Chinese medicine carries the brand name "rhino horn," but he explained that it is really made from substitute products, even though it sometimes might be advertised as the real thing. The Congressman asked whether China was carrying out efforts to change people's perceptions about the use of rhino products in medicines. Apparently, no efforts in this regard have been undertaken.

COMMENT:

In a November 15 meeting at the Great Hall of the People with SSTC Chairman and State Councillor Song Jian, Mr. Scheuer was told in a private conversation that China is keeping some rhinos in captivity on a preserve in an effort to maintain the species. Chinese officials reiterated that China is not currently importing rhino products. Mr. Scheuer noted that while he welcomed these representations, a member of the delegation had purchased, at the Beijing Hotel, "antifebrile" pills which contained 5 percent rhinoceros horn. (A copy of the package insert is attached.)

SUBJECT: Meeting with China's State Science and Technology Commission (SSTC)

DATE: November 13, 1986

LOCATION: Beijing, China

Codel Scheuer met November 13 with Wu Mingyu, Vice Chairman of the Chinese State Science and Technology Commission (SSTC), to discuss the progress of bilateral cooperation under the various scientific protocols. Mr. Wu referred to the 27 bilateral protocols permitting scientific exchanges and allowing both countries to benefit from knowledge and to develop personal friendships. He said that he thought the relationship could be improved with a little effort.

Congressman Scheuer responded by noting that in the main, scientific exchanges had been mutually beneficial and he fully supported the continuation of this effort. However, he observed that some American scientific teams engaged in exchanges had expressed the view that at times the Chinese had not fully shared information from which we might have benefitted. He said this indicated less than full reciprocity and cooperation from the Chinese. Mr. Scheuer mentioned some examples, including a team of U.S. chemists who had shared all of their research and felt they had not received adequate information from their Chinese counterparts.

In another recent case, a group of meteorologists from the National Science Foundation, NASA and the National Weather Service, visited Beijing and gave fully and freely of their knowledge. Congressman Scheuer said that his committee, which has oversight responsibilities in this area, has high regard for the professionalism of these agencies. Apparently, the group requested historical weather data -- going back several centuries -- from the Chinese; this request was refused on the grounds of national security. Mr. Scheuer questioned applications of a military/national security bar to the provision of information about weather.

Mr. Wu said that he fully appreciated the Congressman's frankness and he agreed with his expression of full support for the continuation of scientific exchanges. He admitted that on a recent trip to the U.S. some American friends had observed that the scientific exchanges have not all gone smoothly. He expressed the hope that the exchanges would continue and he offered to investigate the two incidents which the Congressman had mentioned.

Mr. Wu suggested that the delegation of chemists (see attached article) may have been an unofficial, rather than an official, exchange. He also commented that sometimes news articles are not

accurate. As for the request for historical weather data, he said that such information is under the jurisdiction of the National Palace Museum and that he would seek to persuade those officials to provide the data to the American scientists.

Congressman Scheuer said that he appreciated Mr. Wu's efforts to move the appropriate bureaucracies to remove barriers and open the floodgates to permit the flow of information, in keeping with the spirit of scientific exchange.

Mr. Wu said he fully agreed that the scientific exchanges should be conducted openly and that Chinese scientists would try their best to make more contributions. He mentioned especially close working relations with American oceanographers and meteorologists, referring to cooperation on researching the Chinese coastline, which he stressed was completely open to American authorities. He also referred to a joint U.S.-PRC investigation to the mouth of the Yangtze River. He said that such scientific exchanges hold great potential for the development of bilaterial friendship and make a contribution to bilateral trade. Halting such exchanges, he said, would sabotage the good feelings already developed and he was certain that, thanks to wise statements on both sides, the exchanges would continue far into the future.

Mr. Scheuer thanked Mr. Wu for his response and he expressed his hope that the Vice Chairman would do his best to move things forward and unblock the bureaucratic barriers. He echoed the sentiment that the science and technology exchanges would have reverberating positive influences for both countries.

SOUTH CHINA MORNING POST, OCTOBER 29, 1986

Scientific exchange 'a trickle'

From MALCOLM BROWNE in Beijing

SINCE establishing diplomatic relations 14 years ago, China and the United States have developed a scientific partnership that has become an important conduit of advanced Western technology to the most populous country on Earth.

But although many fields of Chinese research are now progressing rapidly on their own, growing numbers of American scientists say the flow of scientific information from China to the United States remains a mere trickle.

The lopsided character of American-Chinese exchanges of scientific information was brought home to 14 American chemists who concluded an exchange visit to China this month.

Dazzled by China's scenic wonders and sumptuous cuisine, the Americans were nevertheless left wondering if they had learned anything of substance in exchange for the professional insights they had offered to their Chinese hosts.

In their two-week visit, delegates from the American Institute of Chemists presented talks and research material based on their specialties, some of which were linked to industrial and military technologies vital to Chinese interests.

The men and women in the group also had money for a fund that subsidises some of the 30,000 Chinese scientists and students China has sent abroad to learn from the West.

At the conclusion of their trip, the Americans professed themselves amply rewarded by the chance to tour China, but most also lamented the fact that the scientific exchange had been essentially a one-way transaction.

Their experience appears to have been shared by many of the American scientific missions that have visited China in recent years.

Dr Philip Abelson, an organiser of the first delegation sent to China by the American Association for the Advancement of Science in 1978, believes that one reason for the inaccessibility of such information is the relative backwardness of Chinese technology.

"The Chinese don't have all that much to show and they are naturally reticent about exposing their shortcomings," he said.

"Ideological resistance to disclosing privileged information appears to be declining, but it's still a factor.

"On top of all that, China has always had a negative attitude towards foreigners and attitudes cannot be changed as easily as switching off a light."

Dr Abelson added: "I would consider making another trip to China myself only if really substantive information were to become available from the Chinese."

A contrasting explanation for Chinese reticence was offered by Mr William Havens, the executive secretary of the American Physical Society.

"One-on-one relationships between American and Chinese physicists are generally very productive of results in the pure sciences, especially solid-state and high-energy physics," Mr Havens said.

"However some of our applied-science people have been frustrated in their desire to get a glimpse of Chinese industrial processes — those involving advanced lasers, for example — but the Chinese don't structure exchanges in such a way as to allow such glimpses."

"In fairness, of course, it's hard to imagine an American company like IBM allowing outsiders to see its proprietary processes."

Still, American openness contrasts sharply with Chinese secrecy in many aspects of the scientific relations between the two countries.

Space technology is typical.

Although Chinese officials and experts have been given significant access to the technology underlying American space programs, the gesture does not appear to have been reciprocal.

(The New York Times)

SUBJECT: Meeting with the Family Planning and Population Research Center, Chinese Academy of Social Sciences (CASS)

DATE: November 14, 1986

LOCATION: Beijing, China

Principal officials who met with the delegation were: Zhao Fusan, Vice President, CASS; Tian Xueyuan, Associate Professor and Director of Population Research Center; Lin You Su, Social Demograher; and Sha Ji Cai, Associate Research Fellow.

The Population Research Center, staffed by 26 professionals, is divided into three sections: statistics, population and employment, and demographic sociology. It is responsible for publication of the China Population Yearbook. Under the current five-year plan, it is undertaking three main projects: 1) A sample survey of the aged population, looking particularly at social welfare programs; 2) research and migration; and 3) a study of population and employment.

When asked if the center were conducting any research alternatives to the one-child policy, particularly along lines proposed by John Bongaarts and Susan Greenhalgh (Population and Development, Vol. II, No. 4, December, 1985), Prof. Tian replied that the article had raised valid points. However, his view is that the crucial characteristics necessary to understand and project China's demographic situation are the following:

1. the enormous size of the population base;
2. the relatively young age structure; with more than 60 percent of the population below age 30; and
3. the fact that the great majority of the population continues to reside in the rural areas.

The Bongaarts/Greenlaugh proposal, to allow two children per family, with age at first birth of 27 and at least 4 years between births, is similar to proposals being studied in Shandong, Shaanxi, and Gunagdong provinces. This model would achieve the target of a 1.2 billion population by 2000. However, it would raise the number at which the population would stabilize. Moreover, Prof. Tian emphasized, there is concern that if there is a two-child policy, people would be more likely to have three or four children, while with a one child policy, they are more likely to have fewer than three children.

In this connection, Prof. Tian observed that there seems to be a misunderstanding outside of China regarding the nature of the family planning policy. Not all families are required to have

one child. Prior to the implementation of the policy, the potential impact on the labor force, on children, on family structure, etc., of the one and two child alternatives, was carefully studied by demographers and sociologists. Taking the long view, and considering the country's interests as well as the world-wide concern about global carrying capacity, it was decided to adopt the one child policy. Prof. Tian stressed that the government only advocates one child per couple. As the target is a total fertility rate of 1.7, more couples are expected to have two children than are expected to have only one. The concept of childlessness or remaining single is totally alien in the Chinese context, and Prof. Tian and his colleagues obviously regarded the question about incentives in this area as amusing. In fact, they pointed out, organizations like the Women's Federation organize social functions for young people. They stressed that the Government wants people to have a happy family life; not only is there tremendous social pressure to get married and have a child, the right to do so is protected by the Constitution.

Peoples' lifestyles are changing, and people who limit their family to one child do so because of economic factors, not merely because of government slogans. According to Prof. Tian, many couples, particularly in urban areas, were limiting their family to one child long before the one-child policy was formulated. In rural areas, couples still receive pressure from their families to have more than one child.

The Center is not conducting research on coercion. Prof. Tian noted that public pressure clearly exists not to have more than two children. In addition, economic pressures are also present. Couples who have additional children without permission may lose their jobs or be fined. These fines, generally 10 percent of a couple's income for a specified period of time, are paid into a "social welfare fund" for local activities. In poor areas, however, many people cannot afford to pay and are not forced to do so. Even in rich areas, if a couple refuses to pay, nothing can be done, since there is no law requiring them to do so.

Prof. Tian noted that the family planning program has run into difficulties as a result of economic reform. Many people are having two or more children and are not listening to the family planning cadres. The Center is investigating other incentives, such as ways of improving the social security and pension systems, which may help to increase acceptance of the one-child family.

SUBJECT: Meeting with State Councillor Song Jian

DATE: November 15, 1986

LOCATION: Beijing, China (Great Hall of the People)

Codel Scheuer, together with Ambassador Lord, met November 15 at the Great Hall of the People with State Councillor and Chairman of the SSTC (State Science and Technology Commission) Song Jian. Song expressed a warm welcome to the Codel, noting close and smooth working relations between Chinese and American scientists, with the support of government officials of both sides. He said that friendship between the academic circles of the two countries is improving.

Congressman Lujan expressed gratitude on the part of the Codel for the hospitality of the National People's Congress and other Chinese organizations. He said that it had been a honor to visit with many Chinese and that the Codel had been pleased with the openness and frankness of the discussions, all conducted in a spirit of friendship. The Congressman continued that in the U.S., many are wrestling with the question of what U.S. Government science policy should be, since federal government funds are so important in directing scientific research. He asked how science policy is developed in China.

Chairman Song replied that the Chinese government began seriously to consider this question in 1984, when the SSTC organized a symposium attended by thousands of scientists and technicians from every field in the country. (See Appendix I) The attendees included older generations educated in Europe and the U.S., and mid-level technicians and government officials. After half a year, he said, they developed a policy, which was summed up by Premier Zhao Ziyang as follows: (1) Scientific research must serve the cause of economic development; and (2) Economic development must rely on research in science and technology.

As a result of this policy, said Chairman Song, all Chinese scientists must face the reality of national need and carry out research accordingly. He said that the SSTC has formulated policies to encourage scientists to make contributions under the overall policy of socialism:

1. Reward those who do a good job in promoting technology;

2. Establish a fund to reward scientific and technological developments; and

3. Encourage scientists and technicians to go to the countryside to help eliminate proverty. Specifically, they are called to help improve the management of small enterprises.

Chairman Song briefly described the "Spark Plan" whereby scientists and technicians are encouraged to help peasants increase production and improve their living standards. He said that the scientists had been warmly received by the peasants, who valued them and their assistance. In the past year, the State budget had allocated 2.3 billion Yuan to send hundrends of thousands of scientists and technicians to rural areas. He said that this program has been highly appreciated internationally -- both in Europe and the United Nations. (Background materials relating to the "Spark Plan" and science policy follow this discussion.)

Chairman Song noted that China is still a developing country and is quite limited by its ancient traditions and form of economy. It is therefore necessary to send educated people to live with the peasants to help them and teach them new, modern ways, scientific knowledge and an improved lifestyle. The Chairman said that the SSTC is also encouraging scientists and technicians to run rural enterprises by themselves. He said they could function as managers of individually-owned or collectively-owned enterprises, and they could even sell shares. Chairman Song said that China is willing to try anything to help people get rich.

Congressman Lujan commented that many Americans consider technology like a god since it returns manyfold the investment spent on research. Thus, he said, there is a similiarity in thinking between Americans and Chinese. Chairman Song noted, however, that Chinese scientists engaged in pure theoretical research are concerned about the emphasis on applied research. He remarked that great scientists say science is a beloved goddess overseeing the dissemination of truth. He commented that the SSTC held this view and will do its utmost to ensure that appropriate support is given to both basic and applied research. He mentioned the Chinese National Science Fund which was established in Spring, 1986 for the purpose of supporting scientific research. The fund will subject project requests to peer review to compete for limited government funds dispensed by the organization.

Congressman Scheuer asked about the selection process for Chinese students sent abroad to study. Chairman Song replied that the Chinese government supports about 6,000 students per year on foreign study and another 2,000 students per year go abroad supported by relatives, friends or institutions. He said that 16,000 Chinese students have already returned from abroad, which proves that the majority will return. He said that Chinese policy does not force the students to return, nor to reimburse the Chinese government for previous education in the event they do not return (as, he said, in the case for the Soviet Union and Eastern European countries). He said that the Chinese government had been pleased when Chinese students had been offered positions in American institutions of higher learning to continue their scientific research. Chairman Song noted that such exchanges are invaluable and over time will accomplish the purpose of improving China's science and technology base.

Chairman Song explained that historically, China fell behind the rest of the world by closing itself off from outside influence. In the closing years of the Qing Dynasty, several important works by Western thinkers -- Rousseau's Social Contract, Darwin's Origin of the Species, Adam Smith's Wealth of Nations -- were translated into Chinese. He said that China can no longer afford to read these works of genius two hundred years after they have been assimilated by the rest of the world. He said that China must hurry up, catch up and stay up with the advanced countries, noting that China has no choice but to face the world and send its students outside to learn advanced ways. He said that when they return they should make a contribution to improving the country so that China will be able to take its place among other advanced countries. He noted that in most cases when the students return, they are warmly welcomed and are given good jobs, although he admitted, it is not always possible to provide a satisfactory position.

Chairman Song disclosed that the State Council has made a major reform establishing a think tank which allows many bright young people to participate in meetings in the State Council and offer their views. He said that among these young people were many who had studied in the U.S. in such universities as Harvard. The leadership has been positively impressed with the breadth of vision which these young people have contributed to the State Council's deliberations.

Congressman Scheuer said that scientific exchange programs have been helpful for both sides and that his committee supports them strongly. He noted, however, two cases where American scientific groups had felt the Chinese had not been forthcoming as they had hoped in supplying information. He mentioned in particular the National Weather Service's request for historic meteorological data, and asked the Chairman to investigate the matter. He pointed out China's unwillingness to supply such information could result in negative publicity which could harm the exchange program.

Chairman Song commented that although most exchanges are carried out smoothly, sometimes unfortunate incidents do occur. He noted that U.S. scientists tend to focus more on academic pursuits where Chinese scientists concentrate on industrial applications to improve people's living standards. He also noted that China's policy of opening to the outside world is still in its initial period, and he freely admitted there are many shortcomings. He appreciated the Congressman's bringing this matter to his attention and promised to investigate it. He asked the Congressman to tell U.S. scientists to inform Chairman Song directly in the event they do not receive information they request from Chinese scientific institutions.

Congressman Foglietta then asked about Chinese research in military defense systems and rockets. Chairman Song began by expressing appreciation for the closer cooperation between the U.S. and China in the area of military scientific and

technological cooperation, pointing out that this had been welcomed in the academic field. He discussed at some length China's possible interest in sending an astronaut to participate in the Shuttle program.

Congressman Moody asked about competition between scientific and military applications for scarce resources. Chairman Song responded that the Chinese government clearly emphasized expenditures for civilian, as opposed to military, purposes, although to the extent possible, scientific research attempts to serve both purposes. He stressed that research for purely military purposes is too expensive and not productive.

SUBJECT: Meeting at Johns Hopkins/Nanjing University Center for Chinese and American Studies

DATE: November 17, 1986

LOCATION: Nanjing, China

Meeting participants were Leon Slavechi, Coordinator of Hopkins/Nanjing Center, and various Center facuity and students.

Center Director Slavecki explained that the Hopkins/Nanjing Center was first proposed in 1979 in talks between Johns Hopkins President Steven Muller and Nanjing University President Kuang Yaming. In 1982, the Chinese Government approved a collaborative project between the two institutions, and work began on planning the curriculum and on designing the Center's academic and housing facilities on the Nanjing University campus.

The Center opened in September 1986 offering one-year programs focusing on: international relations; international economics; Chinese history, politics and foreign policy; U.S. history, politics and foreign policy; and comparative culture.

The facility is composed of both American and Chinese scholars who have expertise in foreign affairs, history and economics. Thirteen Chinese faculty members instruct 24 American students (12 males, 12 females), and 43 Chinese students (27 males, 16 females) study under five American professors.

Turning from the Center's history and purpose, Slavechi then moderated a vigorous series of questions and answers from the approximately 50 students (about one-half Chinese and one-half American) that attended the session. Coming from a very well-informed group of students, the questions ranged in subject matter from why the U.S. Congress voted to withhold funds from the United Nations Family Planning Agency, to who the Members thought would be the Democratic nominee for President in 1988. Many questions focused on U.S. foreign policy and addressed issues such as the Administration's policy regarding South Africa, Taiwan, and the People's Republic of China. Chinese students were particularly curious as to how a difference in foreign policy (such as with South Africa) is permitted to exist in the U.S. government between the President and Congress.

When questioned about the Codel's reaction to the Center, Mr. Scheuer said they were impressed with both the Center and its students. He encouraged the students to take back to their respective cultures what they learn during their year of intense study at the Center.

SUBJECT: Meeting with the Nanjing Training Center for Family Planning Administrators

DATE: November 17, 1986

LOCATION: Nanjing, China

Principal officials who met the delegation were: Xie Xiaofan, President; Zhou Jinxiu, Director of President's Office; Tao Bo, Dean of Studies; Sun Fengming, Deputy Dean of Studies; Ni Yujia, Deputy Director of Training Department; Gu Ningsheng, National Project Director of UNFPA; and several teachers.

The Nanjing Training Center, which has received assistance from the U.N. Fund for Population Activities since 1980, is tasked with training county-level family planning administrators. It has a current capacity of 240 students, which will eventually increase to 800, and has trained 670 administrators to date, both in a two-year diploma course, and in short-term courses. The average age of students at the Center is 30. All have previous experience in family planning and must pass a national examination to attend the Center.

UNFPA has provided about ten percent of the $22 million budget for construction and operation of the Center and 14 training subcenters around the country. President Xie noted that plans to send several teachers to the United States for further training have had to be postponed because of reductions in UNFPA support this year.

A question was raised about the law courses taught as part of the Center's curriculum. Members of the Center's staff noted that students review relevant national and local laws and regulations concerning family planning. Asked about coercion, they noted that students are taught that coercion is considered to be presenting the people with a single option and no alternatives. Center staff emphasized that family planning workers now have greater experience, and students learn how to give general knowledge about bio-medical, social, and economic conditions, as well as how to manage publicity activities so that people may be better informed about family planning.

It was noted that in Jiansu province, where the Center is located, 35 percent of families have one child, and 65 percent have two or more children. Although state policy advocates one child, total fertility in the province is more than two children per family.

SUBJECT: Meeting with Neighborhood Officials, Rinjin Residential Area, Nanjing

DATE: November 17, 1986

LOCATION: Nanjing, China

This was clearly a model neighborhood, complete with videotaped briefing, but the session did provide insights as to how the family planning program is implemented at the neighborhood level. The deputy director of the neighborhood is responsible for family planning, with services and education provided by a full-time worker and approximately eight volunteers for a neighborhood population of 44,892 people.

In 1985, there were a total of 374 births in the neighborhood, of which only four were second births, from a population of 11,289 married women of reproductive age. In calculating birth targets, the neighborhood committee takes into consideration the number of married couples who have not yet had a child and the number of couples who have applied for a second birth. There are no quotas for first births; couples may have a first birth without specific permission (presumably quite soon after marriage).

Couples may apply for a second birth four years after the birth of their first child. Families with "practical difficulties," such as those whose first child is disabled, or cases where both parents are single children, are given priority. In 1986, 20 couples requested and received permission for a second child. It was stressed that family planning workers are also responsible for encouraging eligible couples to have a second child; however, because of economic and housing constraints, many eligible couples do not opt for a second child.

Neighborhood officials noted that education and publicity activities have been carried out in the neighborhood for a long time; as a result, no one wants a third child. Also, living space per person is limited; it is considerably less than the national average of seven square meters person. Abortion and sterilizaiton data were not available, and officials said that women were not required to undergo regular checks to see whether or not they were pregnant.

Subject: **Site Visit to Xichang Satellite Launch Center**

Date: **November 19, 1986**

Location: **Xichang, Sichuan, China**

The Xichang Satellite Launch Center, located in the mountains of Sichuan Province, in south-central China, began operation in 1984. Long March 3 is launched from here, and to date three satellite launches have been conducted from this site. The Chinese did not acknowledge the existence of this facility until 1983 and only recently began permitting Western visitors.

DISCUSSION

Technical Center

The visit of the Xichang Satellite Launch Center began with a tour of the Technical Center by Mr. Du Fang Shong, Deputy Director of the Launch Center. This is where the Long March 3 is prepared for launch prior to being transported to the pad for assembly. The launch vehicles are first brought by train directly into the transient hall, a 30 meter by 54 meter room which can store up to 3 launchers. Two cranes, one capable of lifting 5 tons and one 50 tons, are used to lift the rocket segments from the rail cars. An adjoining room 90 meters long, 27 meters wide and 50 meters high is used for checking out the vehicles. Once a launcher is determined to be qualified it is transported via trucks to the launch site 3 km away where the three stages are mated on the pad. Assembly takes one day to complete. Two working rooms are available for pre-launch testing of satellites, and Mr. Bai Shian Chong, Leader of the Launch Station explained that a separate building is presently under construction for eventual use by foreign customers. Construction is scheduled for completion in October of 1987. The Chinese emphasized that this new preparation facility would provide the necessary security for foreign customers.

A Long March 3 was available for viewing; however, when asked whether there were plans to launch it in the near future, Mr. Bai explained that this vehicle was used for training only and there were no plans to launch it. The Long March 3 is 43 meters long and weighs 13.1 tons when empty and 200 tons when fully loaded. It is capable of generating 280 tons thrust and burns 1250 seconds, reaching an altitude of 5,000 km. The first two stages of Long March 3 are identical to Long March 2 and use UMDH (Unsymmetric Dimethyl Hydrazine) for fuel; the third stage is a cryogenic rocket and burns liquid hydrogen and oxygen.

Launch Site

At the launch site a 96 m high tower stood next to the pad. The tower had eleven adjustable height stories which were used by the technicians in assembling the launch vehicle and satellite. Ten ton and 20 ton cranes were used to lift the segments into place. Two elevators transported equipment and workers to the various floors of the tower which contained six work rooms plus a command room.

Mr. Bai told the delegation of plans to enclose the launch tower to provide a cleaner and more secure working environment for foreign customers; it would also include a 12 foot high "clean room" with adjustable temperature and humidity. These renovations are expected to be completed late in 1987. At a distance of 70 meters, three 125 m high towers surrounded the launch tower for lightning protection. In addition an office building and a small building for storing liquid hydrogen and oxygen and other power supplies were situated within 100 meters of the pad. Blasts from the rocket ignition are deflected by a concrete ramp below the pad and burn the side of an adjacent mountain.

Mr. Lujan questioned the Chinese about their plans for dealing with foreign customers, particularly concerning access to the satellite. They were emphatic about their desire to provide the customer with adequate assurances of secrecy regarding their satellites. The customer would control access to the satellite and would supervise all work. The Chinese would offer assistance only if the customer requested it and anything learned by the Chinese through their assistance would be kept secret.

When asked about future plans for launches, the Chinese had little information. May thru October are the best months for launches and they are tentatively planning on a launch late in '87.

Command and Control Center

The visit to the Command and Control Center included a video presentation of a Long March 3 launch and a tour through the communication and data processing rooms. The Chinese explained that the Launch Commander can activate the self-destruct system in the event of an emergency and destroy the vehicle over any of several designated unpopulated areas. Data are telemetered to the Center where they are processed in real time using one "medium size" (64K) computer. A second identical computer also processes the data, thereby providing redundancy. Status information is displayed on 8 screens surrounding a large screen which provides a color display of the launch. In addition to the two computers used for real time data processing, three other computers are available for post flight processing and analysis.

In addition to the telemetered data, which are recorded, on-board tapes are also used to provide additional data for post flight analysis.

Two TV systems, one at the launch site and one in the control center, are linked via fiber optics and microwave to provide each site with a video display of the other. Data are transmitted from the Center to various tracking stations at a rate of 4800 bits per second.

Meeting with Director, Xichang Satellite Launch Center

Following the tour, the delegation met with Mr. Hou Fu, Director of the Launch Center. He welcomed the delegation saying it was the third official U.S. delegation to visit the Center. Prior U.S. visitors were led by Mr. Richard Smith, Director of Kennedy Space Center, NASA and Caspar Weinberger, Secretary of Defense. They have also met with Teresat, Western Union and other countries regarding launch services. Mr. Lujan asked whether they have met with Lloyds of London in as much as they still own the satellites Teresat plans to launch. Mr. Hou had no knowledge of this as the launch agreement was being negotiated in Beijing. In respnse to a question regarding plans to increase the capabilities of Long March 3 or develop a Long March 4, Mr. Hou stated he believed they were doing this, but this also is the responsibility of the Ministry of Astronautics. He further stated that Long March 3 is adequate for all planned launches including Teresat's and Western Union's.

Mr. Lujan told the Chinese that there was tremendous potential for future launch services because of NASA's new policy regarding launching commercial payloads. He then asked if the Chinese had any specific interests for cooperative ventures with the U.S. Mr. Hou responded that they were interested in keeping communications open.

Mr. Sun Xin An, Program Director, provided a short history of the Launch Center. The survey began in 1970, construction began in 1975, the facility began a test and check-out in 1982, and was first put to use in 1983. The first launch occurred January 24, 1984, and was an experimental communication satellite. The second launch occurred on April 8, 1984, and was also a communication satellite placed in a geosynchronous orbit at 125 degrees East longitude. The most recent launch on February 1, 1986, was also a communication satellite which was positioned at 102 degrees East longitude.

The Center employs approximately 1000 technical personnel and consists of six departments:

-- Check-Out/Technology
-- Command and Control

-- Tracking Stations
-- Communications
-- Meteorological
-- Technical Support/Logistics

There are three tracking stations associated with the center. They only track the first 30 seconds after which control is shifted to the Xian Control Center. There are several tracking stations throughout China; in addition ships are used for tracking, and therefore there is no need for agreements with other countries for additional tracking stations.

There was a short discussion regarding future cooperative endeavors. The Chinese are most anxious to send a Chinese astronaut on a future shuttle mission; however, no specific experiment or mission was identified.

SUBJECT: Visit to the International Peace Hospital for Women and Children, Shanghai

DATE: November 19, 1986

LOCATION: Shanghai, China

The delegation was hosted by: Mme. Zhuang Liuqi, President of the Hospital; Hu Keshi, Vice Chairman, Committee on Education, Science, Culture and Public Health, the National People's Congress (NPC); Mme. Li Jieping, Deputy Chief, General Office of the Family Planning Commission of Shanghai; and a number of other hospital and family planning officials.

The Codel was given a briefing, a tour of the obstetrics and acupuncture departments and then a question-and-answer session. Mme. Zhuang introduced and led the briefing. The hospital, named by Mme. Sun Yat Sen, was founded in 1952 and is reported to be the best of its kind in Shanghai. Since 1952, it has expanded from 50 to 350 beds, from obstetrics to departments of Chinese Medicine, Outpatient, Well Baby and ancillaries, including, xray, laboratory and radio immunoassay. There are 680 workers, 106 doctors, 203 midwives and nurses on staff who see 11,000 inpatients each year and 1,000 outpatients each day. Associated with the hospital is the Institute of Family Planning which provides for research and training, technical guidance, sex education, genetic counseling (for medical personnel and patients where appropriate) and has a midwife school (3-year course).

The obstetrical floor (which the Codel toured) consisted of wards of 5-9 beds of simple steel cot type, with bassinets next to the beds. The rooms were tidy and the patients in clean white rough sheets and blankets. There was little technology or equipment in the rooms, nor were there facilities for handwashing. Staff was providing the mothers with a slide show/lecture on well infant care. We were told that length of stay for normal delivery is 5 days and for C-Section 8 days. The Section rate was given as 25 percent and the reason for this very high rate was that mothers requested sections to avoid the discomfort of vaginal delivery. The newborn nursery appeared to have about 30 newborns in bassinets. We were told the babies only stay for 6 hours and then room in, that average birth weight was 3,000 gms (6.6 lbs.) and that there was a neonatal ICU. This latter facility was a small room wih one or two incubators and some equiment. The nursery had no facilities for handwashing though we were shown sinks across the hall which were for washing the babies. There was a ward for high risk mothers (primarily diabetics) which was physically the same as the regular wards.

We visited the outpatient building which is newer and quite decent. Appointments are from 8 a.m. to 5 p.m. weekdays, first come first served. Patients take a number and, if they pay a very nominal fee (10 Fen), will see a doctor.

The acupuncture department had several patients whose toes or lateral side of the foot was being needled or "lasered" for treatment of abnormal presentation. Since the breech presentation under treatment was only 7 months, some questions of the value of this treatment could be raised but great efficacy was claimed.

We also saw a contraceptive display. Intra-uterine devices are the contraceptive method most often prescribed at the hospital. Even though the hospital had sufficient supplies of more effective Cooper-T IUD, doctors continue to use the steel ring, in spite of its higher failure, because they are used to it. We were told that they had done an investigation to evaluate the risk of ectopia and had found no increased risk from IUDs in a 200-patient case control type study.

During the questions and answer session that followed, Congressmen Scheuer and Moody and Mmes. Li Jieping and Zhuang Liuqi discussed:

- that the hospital treats all women the same whether pregnancy is first, second, or third;
- that in Shanghai women who sign the one child pledge get 5 Yuan/month subsidy, free schooling for the child to 12th grade, a 5 percent increase in pension on retirement, and two weeks more (to ten weeks) maternity leave;
- that women who have a second (or third) child lose all benefits and must pay a 10 percent income tax for three years after the birth of that child; that exceptions to this are made for those whose first child is defective, handicapped or retarded;
- that in Shanghai in 1985, there were 154,299 births:

151,422	1st births*	(98.14%)
2,846	2nd births**	(1.84%)
31	3rd or more births	(.02%)

* 98.2 of first births made the one child pledge.
** only 20 percent of second births without permission.

- that there were:

  2,190,000 women of childbearing age (20-49 yrs)
  1,890,000 contracepting --

13.2%	pill
.14%	monthly injection
51.15%	IUD
18.2%	tubal ligation
2.8%	vasectomy
balance	other (spermicide, foam, etc.)

- that the monthly injection (NORPLANT) made in China is being evaluated in 12 centers around China and is at the option of the women, but has some side effects such as bleeding;

- that the hospital performs 3,000 abortions/year;

- that the abortion rate in Shanghai is 98/100 live births (higher than in the rest of China) -- 50 percent because of contraceptive failure, the rest due to the health of mother or (primarily, undoubtedly) due to mistakes because of irregular cycles during breastfeeding;

- that 90 percent of abortions are first trimester;

- that local officials who are harsh or coercive in implementing the family planning program are "reeducated" or reassigned; and finally,

- that they realize the demographic impact of a one-child policy (current over 65 population of only 7.4 percent ultimately will grow in size substantially) and the social problem of millions of only children and are studying these issues and working with nursery schools to promote early socialization and cooperative behavior.

SUBJECT: Country Team Briefing, U.S. Consulate General, Shanghai

DATE: November 19, 1986

LOCATION: U.S. Consulate General, Shanghai, China

The delegation was briefed by: Consul General Thomas S. Brooks; Larry Robinson, Political Section Chief; Matthew P. Ward, Jr., Economic Section Chief; William Sinclair, Economic Section; and Sherry Willis, Consular Section (visas).

Historically, Shanghai has been the largest, most cosmopolitan city in East Asia and the Pacific Region. Since 1949, it has been a major center for development in providing goods and services to the rest of the country.

Shanghai today represents about 1.2 percent of China's population and about 5 percent of the PRC's fixed assets. Shanghai contributes about 76 percent of all revenues, from business profits, foreign trade earnings, and taxes, to the Finance Ministry, and it represents just over 10 percent of the central government's revenues. Until very recently, Shanghai's financial burden was even heavier -- approximaely 87 percent of all of its revenues went directly to the central government.

In December, 1984, the central government began to realize that the emphasis on production and the neglect of infrastructure had reached a point of crisis and it was for that reason that Shanghai's financial burden was reduced. Over the next five years, plans call for major infrastructure development in Shanghai including an expansion of the airport, a new and larger train station, a second tunnel under the Huang-p'u River, a modern telephone system, more new housing, and many other improvements. Despite these shortcomings, Shanghai has attracted more American equity for joint ventures than any other place in China.

Hong Kong has replaced Shanghai as a place of learning modern technology and as a principal entrepot. However, due to the enormous industrial capacity of Shanghai, officials at the central government and municipal levels expect that this will reverse over time and that Shanghai will once again be the leading center of trade and the primary place for the development of technology and its transfer inland.

Consular officials stated that with respect to family planning, there is no question that the Chinese policy opposes the use of physical force or direct coercion in enforcing family planning

guidelines. Over the last year-and-a-half, the Chinese have emphasized increasingly to Consulate staff, and more and more in their own press, that they are stressing guidelines; it is not a policy.

One of the problems with the family planning guidelines in China is not the policy itself, but in the implementation of the policy at the local level. One thing that happens in China, and this must always be put into the context of China, is that whenever a new policy or reform is enacted by the central government, it comes increasingly more simplified and rigid as it works its way through the bureaucracy. However humane, sophisticated and well-adjusted the policy may be at the central governmental level, by the time it reaches the local level it is a matter of slogans -- preferably four characters -- and is then implemented by cadres accordingly.

SUBJECT: Visit to the Shanghai Xin Zhong Hua Machinery Factory

DATE: November 21, 1986

LOCATION: Near Shanghai, China

On November 21 the delegation visited the Shanghai Xin Zhong Hua Machinery Factory of the Astronautical Ministry. The delegation was welcomed by the factory Director, Mr. Zhang Wen Zhong, his Associate Chief Designer, Mr. Li Xiang Rang, and by Mr. Wang Yue, the Deputy Director of Foreign Affairs in the Shanghai Bureau of Astronautics.

The factory does both design and assembly of the first and second stages of the Long March 3 vehicle. There are more than 3,000 employees, including some 500 engineers, who work in five research sections. These sections include general engineering studies of rocketry, structures and power, telemetry systems, ground equipment, and various nonrocket products.

There is also a technical section which has responsibility for tooling design and production.

The delegation toured Workshop Number 6, the facility in which integration and testing of the first and second stages of Long March 3 vehicles occurs. While there were no flight articles in the workshop, there were two ground engineering test vehicles.

The Long March 3 is a three stage rocket with an overall length of 43.25 meters. The first and second stages have a diameter of 3.35 meters, and the third stage is 2.25 meters in diameter. Total mass of lift-off is approximaely 203 tons. This vehicles has been operational since 1984 and has a payload capability to GTO of 1,400 kg.

According to Mr. Zhang, after assembly and testing at Shanghai, the first and second stages are placed into protective wrappings and shipped to the launch site at Xichang on special railcars. There they go through full testing and final integration. Then they are trucked to the launch pad and stacked. Mr. Zhang estimated that it would take about five weeks for testing and integration, and another three weeks on the pad for final pre-flight checks.

At the present time the Shanghai factory is capable of producing five or six Long March 3 rockets per year, with the capability to surge to ten per year. The proposed price for a launch to GTO on a Long March 3 will be $30 million which will include insurance.

SUBJECT: Country Team Briefing, U.S. Consulate General, Hong Kong

DATE: November 24, 1986

LOCATION: U.S. Consulate General, Hong Kong

The delegation met with Mr. Patrick DelVecchio, political officer with the Consulate General in Hong Kong. Mr. DelVecchio provided an overview of the current situation with respect to the transfer of Hong Kong to China and its historical antecedents.

BACKGROUND

The British Crown Colony of Hong Kong consists of Hong Kong Island, the Kowloon Peninsula, the New Territories north of Kowloon, and approximately 235 surrounding islands. The Colony is one of the most densely populated areas in the world with over five million people living within its 404 square miles.

Hong Kong is a major world center for investment, trade and contact with China. Over 800 U.S. corporations are located in Hong Kong, doing business with China and all of Asia. Normalization of relations between China and the U.S. has proved to be extremely beneficial to Hong Kong. Its harbor, modern communications, transportation and banking facilities and its extensive expertise in China trade have demonstrated Hong Kong's continued importance. With respect to the U.S., there is currently in excess of $4 billion in direct American interests in Hong Kong. Hong Kong is this country's tenth largest trading partner with about $11.5 billion in bilateral trade in 1985.

The United States and the Hong Kong government share an excellent and cooperative relationship. U.S. relations with the Colony revolve primarily around economic matters involving textiles and the Generalized System of Preferences (GSP). There are cooperative arrangements regarding refugees, narcotics trafficking and smuggling.

The textile and apparel industry is the largest manufacturing sector in Hong Kong and accounts for over 40% of Hong Kong's exports. The United States is Hong Kong's single largest market for textiles and apparel. Hong Kong, which is dependent almost exclusively on trade, is deeply concerned with the protectionist movement in the U.S.

FUTURE OF HONG KONG

Hong Kong was created on the basis of three treaties signed between 1848 and 1898. The first two treaties, concluded after

the Opium Wars, gave Hong Kong and the Kowloon Peninsula to the British Crown "in perpetuity." The 1898 treaty granted a 99-year lease on the adjoining land, referred to as the New Territories. While the subsequent Chinese governments traditionally renounced these "unequal treaties," the status quo has continued. However, with the expiration of the New Territories lease approaching, concerns escalated about the future of Hong Kong. In 1982 the British announced that after June 30, 1997, they will no longer legally be able to administer the New Territories. Given that the New Territories have become fully integrated into the economic fabric of Hong Kong, the question became one of the future of the entire Colony.

That question was addressed in the Sino-U.K. agreement signed by Prime Minister Thatcher and Premier Zhao Ziyang in 1984, which states that the British will transfer Hong Kong to Chinese rule on July 1, 1997. In addition:

- The Chinese guarantee that Hong Kong will be governed as a special administrative region for 50 years.
- During this time, the Chinese will maintain Hong Kong's political, economic and judicial systems.

A joint liaison group is responsible for the implementation of the accord during the transition period. Thus far, according to Mr. DelVecchio, the process is proceeding quite well. The Chinese government is seen as going to great lengths to reassure Hong Kong residents of an orderly transition and to maintain investor confidence in that area's continued economic and political stability. Indeed, the Chinese have sought input from all sectors of the Hong Kong community through advisory groups; the business advisory includes, inter alia, representatives of American businesses.

In the view of many observers, the prognosis for a successful transition is very good. It is clearly in China's interest to make this transition succeed, in part because of the significant role that Hong Kong plays in its economy. More importantly, perhaps, is the larger aspect of China's assimilation of Hong Kong: its impact on the prospects for reunification with the island of Taiwan. Many believe that moderates in Taipei will view China's success or failure with governing Hong Kong as a litmus test for PRC ability to reunite with Taiwan in a fashion that will permit that island's economy to continue to flourish. Mr. DelVecchio noted that not all observers are optimistic with respect to Hong Kong's future. Pessimists suggest that the fragile nature of Hong Kong's economy, coupled with the perceived inflexibility of the Chinese bureaucracy, will combine to make the prospects for success a very remote possibility. To a certain degree, recent Chinese efforts to restructure their economy have lessened the validity of what Mr. DelVecchio termed the "pessimistic scenario."

STATISTICAL DATA ON SCIENCE AND TECHNOLOGY OF 1985

(RESEARCH AND DEVELOPMENT INSTITUTIONS SUBORDINATE TO GOVERNMENT DEPARTMENTS)

THE STATE SCIENCE AND TECHNOLOGY COMMISSION OF THE PEOPLE'S REPUBLIC OF CHINA

APRIL 1986 **BEIJING**

Preface

In Autumn 1985, the Science and Technology Leading Group of the State Council of the People's Republic of China decided to launch a nationwide general survey on science and technology. The objects of the general survey are research and development institutions in the field of science and engineering, agriculture and medicine which are subordinate to government departments at all levels, the Chinese Academy of Sciences, institutions of higher education and large- and medium-sized enterprises (hereinafter refered to as R&D institutions) The general survey on science and technology, under the coordination by the general office of the Science and Technology Leading Group of the State Council, was carried out jointly mainly by the State Science and Technology Commission, the State Statistic Bureau and relevant departments. The work has enjoyed enthusiastic support and cooperation from all departments of the State Council, provinces, autonomous regions, municipalities directly under the central Government and various R&D institutions. In order to present to you as early as possible the results of the general survey, the State Science and Technology Commission compiles this booklet. We are indebted to those who took part in this exploitive work, put in a lot of hard work and made contributions to the work. Beyond this, we are also heavily indebted to government departments at all levels and their leading cadres for their support and concern from start to finish to the general survey on science and technology.

Data in the booklet do not include data of education, industrial enterprises and the defence system.

The indicators and relevant definitions and concepts employed in the booklet are basically based on the standards suggested by the UNESCO, excepting this, relevant indicators and explanatory notes are supplemented in the light of specific conditions of China.

The forms of statistical data are compiled and designed by the General Office of General Survey on the Science and Technology, while the tables and figures are made on computers by the Institute of Information Research and Management of the State Science and Technology Commission.

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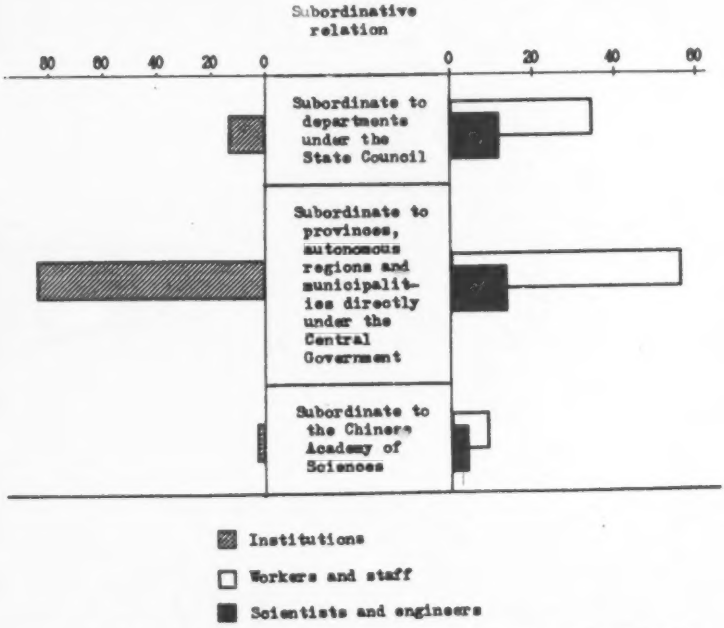
I. R&D institutions subordinate to government departments above the county level and their personnel

There are in China 4690 R&D institutions subordinate to government departments above the country level(1) with a total of 770,000 workers and staff, of which 231,000 scientists and engineers(2), i.e. 30% of the total number of workers and staff.

84% of R&D institutions are subordinate to provinces, autonomous regions and municipalities directly under the Central Government. Though the R&D institutions subordinate to the Chinese Academy of Sciences account only for 2.6% of the total R&D institutions of China, they have scientists and engineers as many as 13.9% of the total number of scientists and engineers of R&D institutions in China(Fig.I-1,Table1-1).

Fig. I-1 Distribution by the subordinative relation (%)



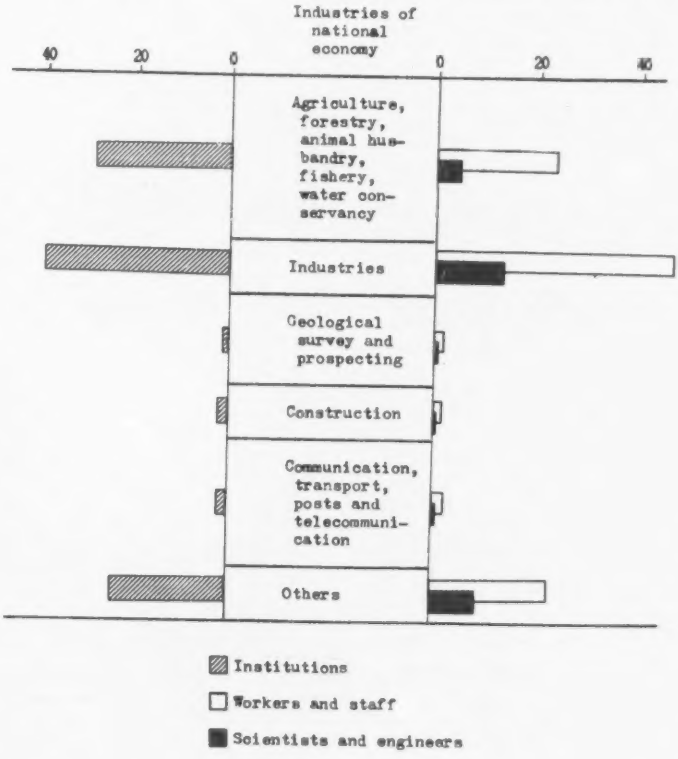
(1) That is, R&D institutions subordinate to government departments at and above the prefecture and the city (divided into districts) level.

(2) Scientists and engineers refer to persons possessing university graduate or higher cultural level and others having the senior or intermediate academic title.

I. R&D institutions subordinate to government departments above the county level and their personnel

As classified by industries of national economy, R&D institutions in industries and in agriculture, forestry, animal husbandry, fishery, water conservancy are larger in number, they account for 40% and 29% respectively of the R&D institutions of the whole country and 47% and 24% respectively of workers and staff of them. R&D institutions in industries have the largest number of scientists and engineers which account for 45% the total number of scientists and engineers of R&D institutions of China (Fig. I-2, Table I-2).

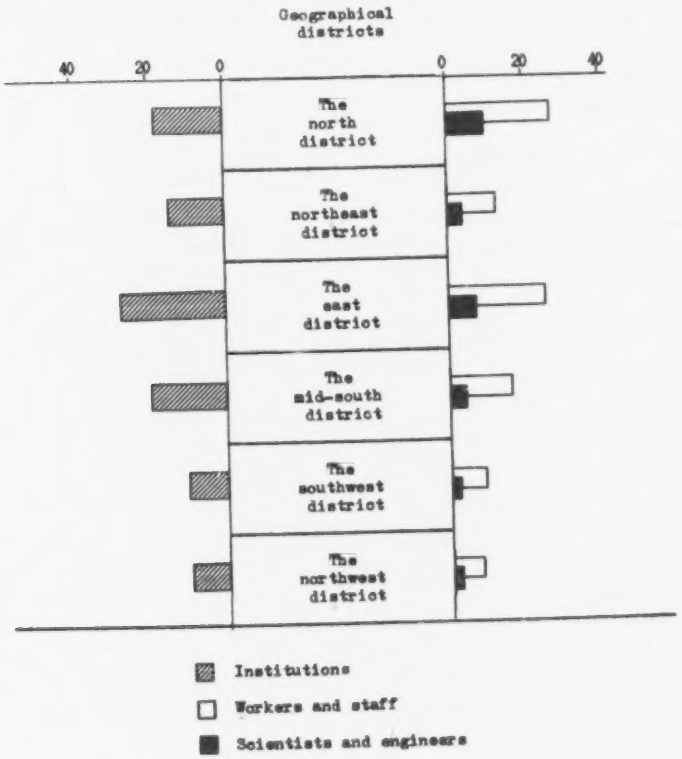
Fig. I-2 Distribution by industries of national economy (%)



I. R&D institutions subordinate to government departments above the county level and their personnel

Geographical districts differ significantly in the intensiveness in the distribution of the number of R&D institutions and scientists and engineers. The east district has a larger number of R&D institutions, i.e. 28% of the Chinese R&D institutions; while the north district has only 18% of the Chinese R&D institutions, yet it possesses 33% of the Chinese scientists and engineers. R&D institutions and scientists and engineers in the southwest and northwest districts both account for 10% respectively of the Chinese R&D institutions and scientists and engineers (Fig. I-3, Table I-3).

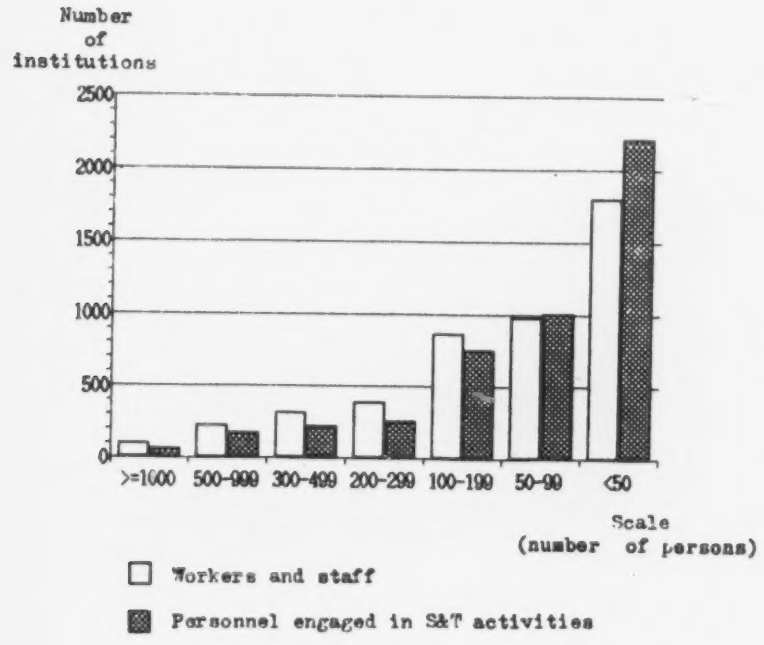
Fig. I-3 Distribution by geographical districts (%)



I. R&D institutions subordinate to government departments above the county level and their personnel

R&D institutions of the scale of more than 500 persons are mostly concentrated in departments of the State Council, accounting for 1/2 of the Chinese R&D institutions of the same scale; while R&D institutions of the scale of less than 50 person are mostly concentrated in provinces, autonomous regions and municipalities directly under the Central Government, accounting for 97% of the Chinese R&D institutions of the same scale (Fig. I-4, Tables I-4 and I-5).

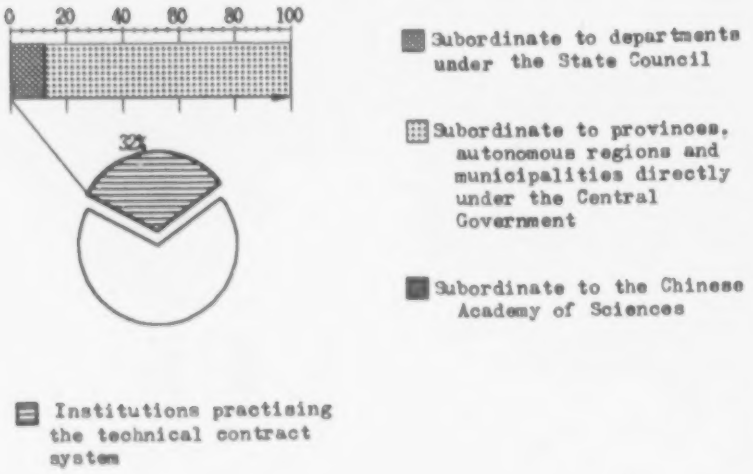
Fig. I-4 Institutions grouped by the number of workers and staff and the number of personnel engaged in S&T activities



I. R&D institutions subordinate to government departments above the county level and their personnel

By the end of 1985, 32% of the Chinese R&D institutions have adopted the technical contract system, of which 317 institutions are financially self-supported and 640 institutions receive less financial aid from the government (Fig. I-5, Table I-6).

Fig. I-5 Institutions practising the technical contract system (%)



I. R&D institutions subordinate to government departments above the county level and their personnel

Table I-1 Distribution by the subordinative relation

	Number of institutions	Total number of workers and staff (person)	Of which: personnel engaged in S&T activities (person)		
			Total	Of which: scientists and engineers	Of which: other S&T personnel
Total	4690	770416	575736	231050	121000
Subordinate to departments under the State Council	622	266412	204370	93026	36787
Subordinate to provinces, autonomous regions and municipalities directly under the Central Government	3946	434354	313146	105850	75385
Subordinate to the Chinese Academy of Sciences	122	69650	58220	32174	8828

I. R&D institutions subordinate to government departments above the county level and their personnel

Table I-2 Distribution by industries of national economy

	Total number of institutions	Total number of workers and staff (person)	Of which: personnel engaged in S&T activities (person)		
			Total	Of which: scientists and engineers	Of which: other S&T personnel
Total	4690	770416	575736	231050	121000
Agriculture, forestry, animal husbandry, fishery, water conservancy	1377	182364	115430	37799	21219
Industries	1882	361067	278132	104559	55696
Geological survey and prospecting	61	15732	12861	7048	2521
Construction	103	13786	11295	5089	2596
Communication, transport, posts and telecommunication	98	19371	16326	7602	3541
Others	1169	178096	141692	68953	35427

I. R&D institutions subordinate to government departments above the county level and their personnel

Table I-3 Distribution by geographical districts

	Number of institutions	Total number of workers and staff (person)	Of which: personnel engaged in S&T activities (person)		
			Total	Of which: scientists and engineers	Of which: other S&T personnel
Total	4690	770416	575736	231050	121000
The north district	848	210637	158938	75354	30204
The northeast district	686	99579	73037	29842	15987
The east district	1291	197336	151080	56545	32494
The mid-south district	930	127344	92886	32631	19404
The southwest district	481	71836	52610	18416	12132
The northwest district	454	63684	47185	18262	10779

I. R&D institutions subordinate to government departments above the county level and their personnel

Table I-4 Institutions grouped by the number of workers of staff

	Total number of institutions	>= 1000	500-999	300-499	200-299	100-199	50-99	< 50
		(person)						
Total	4690	102	229	316	392	868	982	1801
Subordinate to departments under the State Council	622	62	120	116	74	110	79	61
Subordinate to provinces, autonomous regions and municipalities directly under the Central Government	3946	22	75	171	303	740	895	1740
Subordinate to the Chinese Academy of Sciences	122	18	34	29	15	18	8	0

I. R&D institutions subordinate to government departments above the county level and their personnel

Table I-5 Institutions grouped by the number of personnel engaged in S&T activities

	Total number of institutions	>= 1000	500-999	300-499	200-200	100-199	50-99	30-49	20-29	10-19	1-9
		(person)									
Total	4690	60	176	221	258	753	1008	703	500	661	350
Subordinate to departments under the State Council	622	37	106	96	79	127	99	46	15	11	6
Subordinate to provinces, autonomous regions and municipalities directly under the Central Government	3946	9	45	89	163	606	900	655	485	650	344
Subordinate to the Chinese Academy of Sciences	122	14	25	36	16	20	9	2	0	0	0

I. R&D institutions subordinate to government departments above the county level and their personnel

Table I-6 Institutions practising the technical contract system

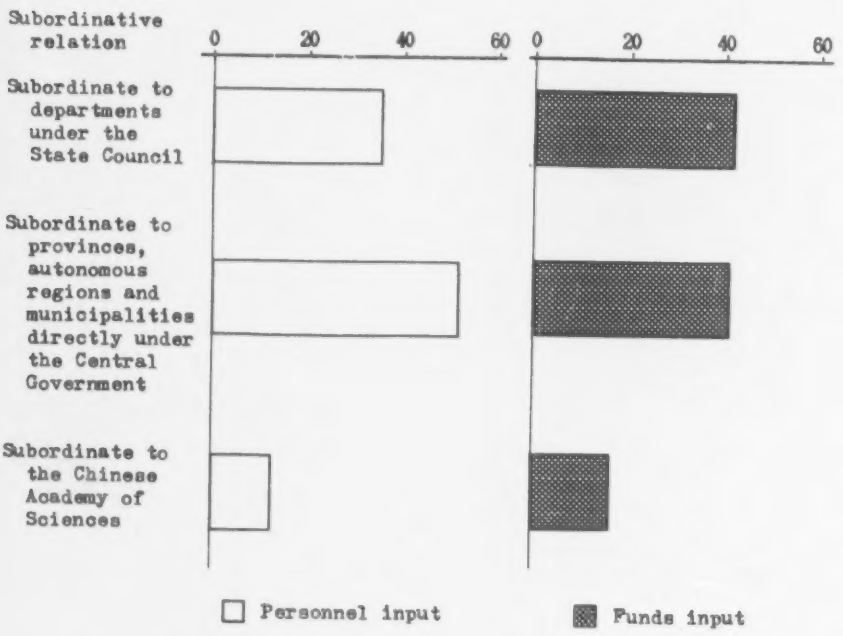
	Total number of institutions	Number of institutions practising the technical contract system	Of which: financially self-supported	Of which: receiving less financial aid from the government
Total	4690	1499	317	640
Subordinate to departments under the State Council	622	184	39	87
Subordinate to provinces, autonomous regions and municipalities directly under the Central Government	3946	1315	278	553
Subordinate to the Chinese Academy of Sciences	122	0	0	0

II. S&T activities of R&D institutions subordinate to government departments above the county level

II-1 S&T subjects and their input (personnel, funds)

In 1985, R&D institutions developed 73,000 S&T subjects at a personnel input of 243,000 person and fund input of 1.81 billion yuan. By comparison of the total input (personnel, funds), provinces, autonomous regions and municipalities occupy first place, departments under the State Council come second and the Chinese Academy of Sciences third. The proportion of the average input of each subject of the three is 1 : 1.2 : 1.7 and 1 : 1.6 : 2.8 in personnel and fund respectively, that is, the Chinese Academy of Sciences occupies first place in the resource input of each subject, and departments of the State Council come second (Fig. II-1-1).

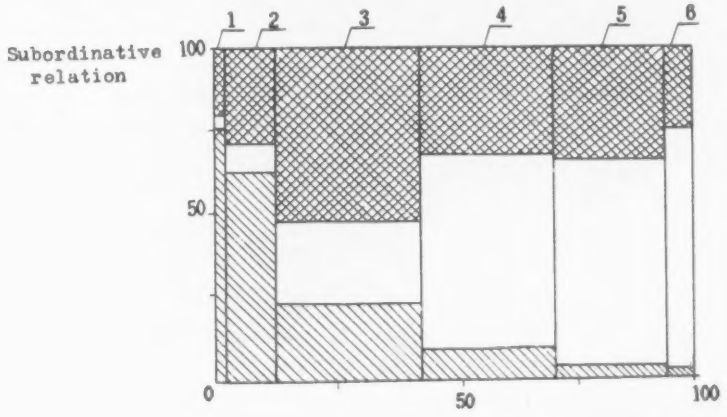
Fig. II-1-1 Distribution by the subordinative relation (%)



II. S&T activities of R&D institutions subordinate to government departments above the county level

S&T subjects of R&D institutions of different subordinative relation have distinct districts of concentration in distribution. Viewing from the input funds of S&T subjects, basic research and applied research are mostly carried out in large-sized and comprehensive R&D institutions, such as the Chinese Academy of Sciences; while the experimental development is mostly carried out in departments under the State Council, and the engineering and designing, dissemination and service, productive activities and so on are mainly carried out in R&D institutions of provinces, autonomous regions and municipalities directly under the Central Government (Fig. II-1-2, Fig. II-1-3).

Fig. II-1-2 Distribution of fund input of various S&T subjects by subordinative relation (%)



1. Basic research 2. Applied research 3. Experimental development
4. Engineering and designing 5. Dissemination and service
6. Productive activities

▒ Subordinate to departments under the State Council

□ Subordinate to provinces, autonomous regions and municipalities directly under the Central Government

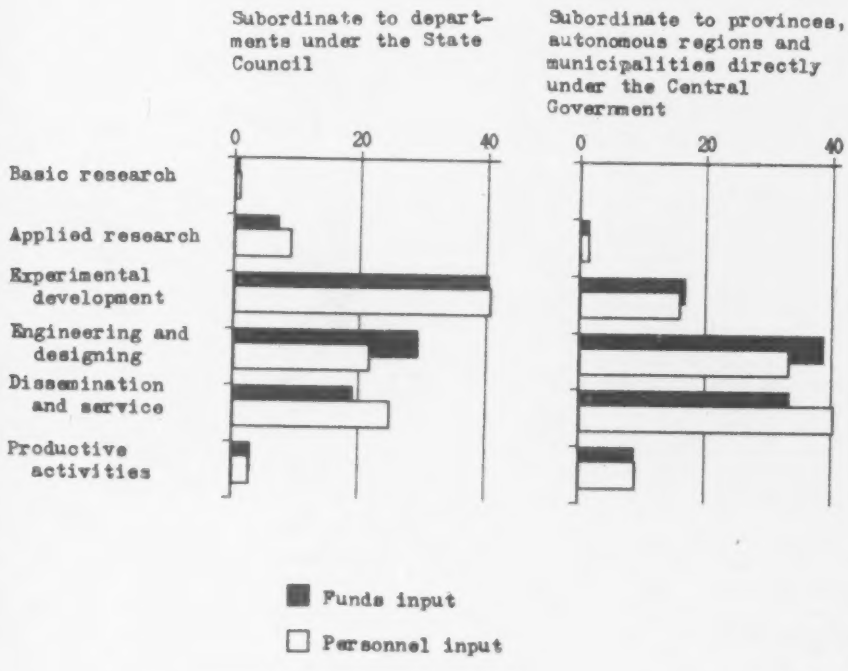
▨ Subordinate to the Chinese Academy of Sciences

II. S&T activities of R&D institutions subordinate to government departments above the county level

The "spectrum range" of types of S&T subjects of R&D institutions in China is rather wide; not only the basic research, applied research and experimental development (i.e. R&D activities), but also engineering and designing, dissemination and service, productive activities and so on are carried out, covering the whole process from scientific research to direct application.

The ratio of subjects between R&D activities and other activities is 1:2.4.

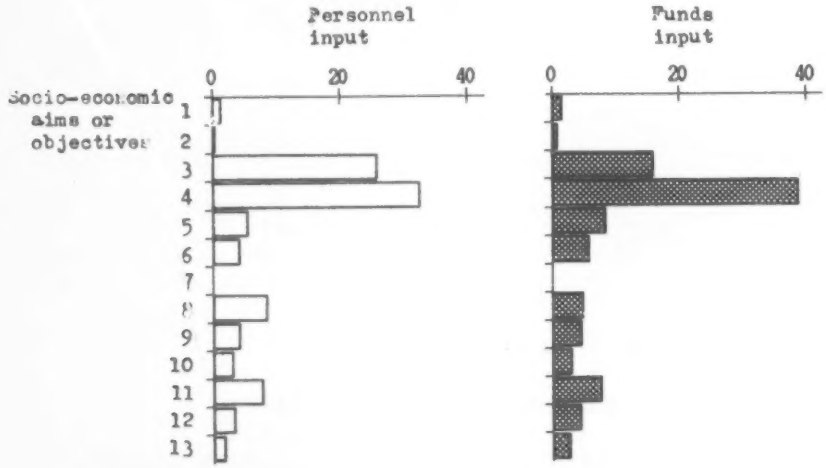
Fig. II-1-3 Distribution by types of S&T subjects (%)



II. S&T activities of R&D institutions subordinate to government departments above the county level

The socio-economic fields (aims or objectives) for which inputs of S&T subjects serve show R&D activities are centred mainly on the promotion of the development of industries, agriculture, forestry and fishery (Fig. II-1-4).

Fig. II-1-4 Distribution by major socio-economic aims or objectives (%)

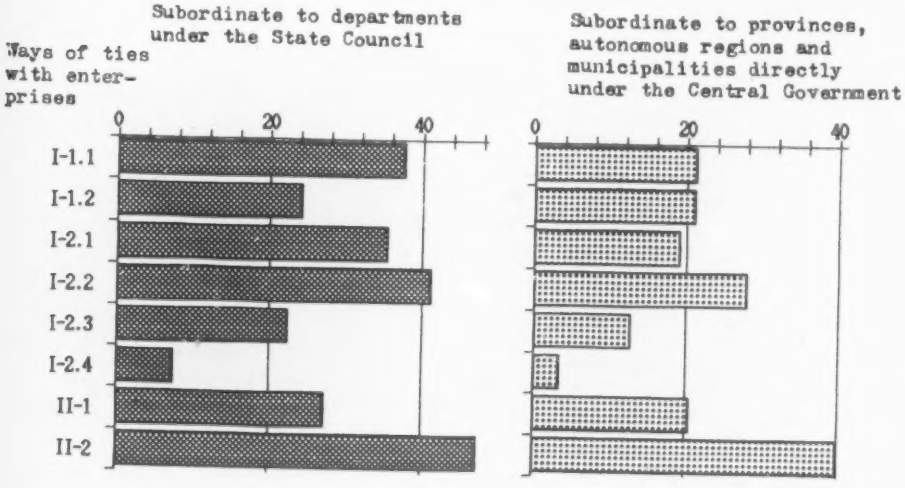


1 Exploration and assessment of the earth, the seas and the atmosphere
2 Civil space
3 Development of agriculture, forestry and fishing
4 Promotion of industrial development
5 Production, conservation and distribution of energy
6 Development of transport and communication
7 Development of education services
8 Development of health services
9 Social development and socio-economic services
10 Protection of the environment
11 General advancement of knowledge
12 Other aims
13 Defence

II-2 Ways of ties with enterprises

The reform of the S&T structure in China helps promote the S&T work to be geared to the needs of economic development, 24% of R&D institutions have established with enterprises the constant ties which are R&D oriented and 22% of them have set up with enterprises the constant ties for providing technical consultation services. The R&D institutions subordinate to departments under the State Council and the R&D institutions subordinate to provinces, autonomous regions and municipalities have their own emphases respectively on the two above-mentioned ways of ties(Fig. II-2-1).

Fig. II-2-1 Distribution of ways of ties with enterprises(%)



II. S&T activities of R&D institutions subordinate to government departments above the county level

Note:
In the national general survey on science and technology, ways of ties of R&D institutions with enterprises are divided into types as follows:

I. With constant (legal) ties:

I-1.1 Oriented by the direction of tasks of R&D institutions, the production units (enterprises) take on the manufacturing of the supporting facilities, trial production and projects which are of succession and linkage to both sides;

I-1.2 Oriented by the business goal of production units (enterprises), R&D institutions take on long term services, such as technical advice, consultation, training, test and measurement, etc.

I-2.1 Transfer of technological results with aims;

I-2.2 Working on technical consultation services, training, etc.;

I-2.3 Developing products or processes in the forms of joint venture, partnership, buying shares or cooperative operation;

I-2.4 Running industries and commerce in the forms of joint venture, partnership, buying shares or cooperative operation.

II. By market regulation:

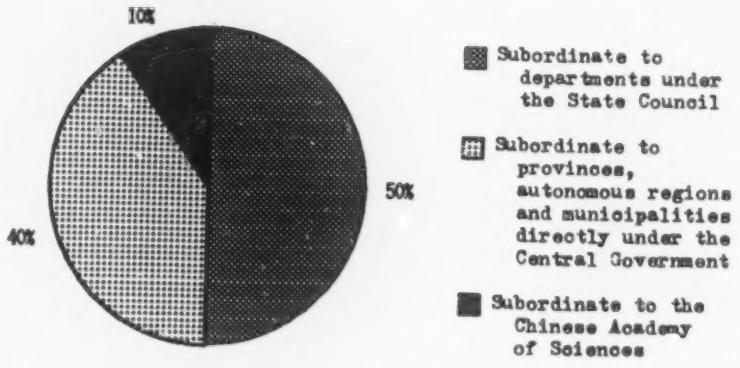
II-1 R&D institutions have the constant business of market analysis and clear and definite users and service objects, planning their R&D activities in the light of the need of market;

II-2 R&D institutions plan their R&D activities voluntarily and will look for users after they have achieved results.

II-3 Technology transfer

In 1985, the volume of business of technology transfer of R&D institutions came up to 780 million yuan. The R&D institutions subordinate to departments under the State Council showed greater potentials in technical development. They accounted for only 13% of the Chinese R&D institutions but 50% of the volume of business of technology transfers of the country (Fig.I-1 and II-3-1).

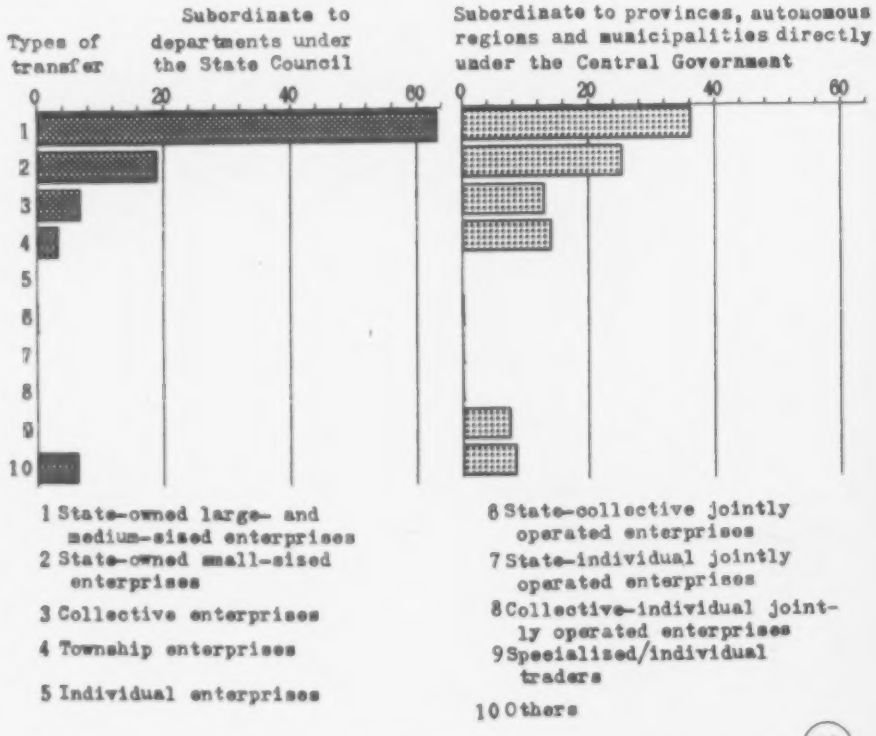
Fig. II-3-1 Distribution of the volume of business by the subordinative relation (%)


10%
50%
40%
Subordinate to departments under the State Council
Subordinate to provinces, autonomous regions and municipalities directly under the Central Government
Subordinate to the Chinese Academy of Sciences

II. S&T activities of R&D institutions subordinate to government departments above the county level

It is shown from the distribution of the volume of business by types of transferee that technological results and key flows of R&D institutions different subordinative relations have their own emphases respectively. The volume of business made with large- and medium-sized enterprises of ownership by the whole people accounts for 51% of the total volume of business, of which 63% is provided by R&D institutions subordinate to departments under the State Council, while the volume of business made with collective and township enterprises is smaller, which is mainly provided by R&D institutions subordinate to provinces, autonomous regions and municipalities directly under the Central Government (Fig. II-3-2).

Fig. II-3-2 Distribution of the volume of business by types of transfer (%)

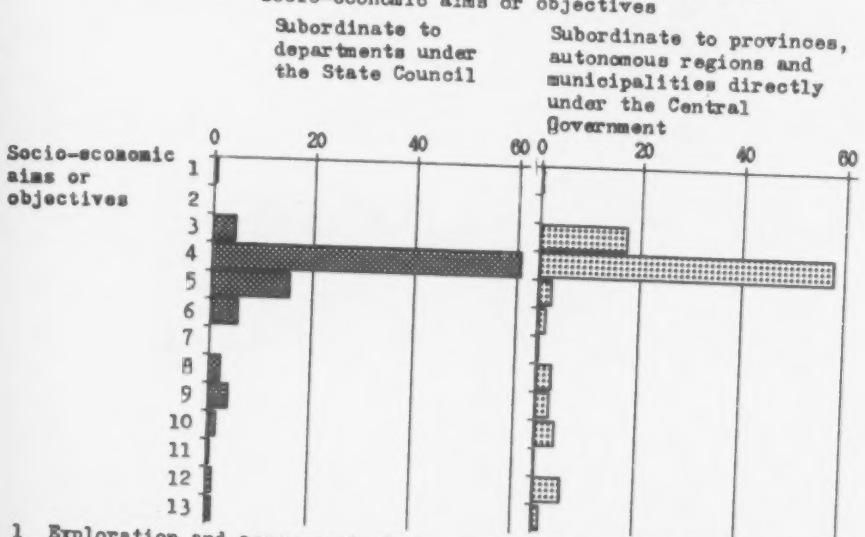


1 State-owned large- and medium-sized enterprises
2 State-owned small-sized enterprises
3 Collective enterprises
4 Township enterprises
5 Individual enterprises
6 State-collective jointly operated enterprises
7 State-individual jointly operated enterprises
8 Collective-individual jointly operated enterprises
9 Specialized/individual traders
10 Others

II. S&T activities of R&D institutions subordinate to government departments above the county level

Nearly 58% of the volume of business of technology transfer is used for the promotion of industrial development. R&D institutions subordinate to departments under the State Council have a significant volume of business in promoting the communication development and energy exploitation while those subordinate to provinces, autonomous regions and municipalities have a significant volume of business in promoting the development of agriculture, forestry, animal husbandry, fishery and water conservancy (Fig. II-3-3).

Fig. II-3-3 Distribution of volume of business by major socio-economic aims or objectives



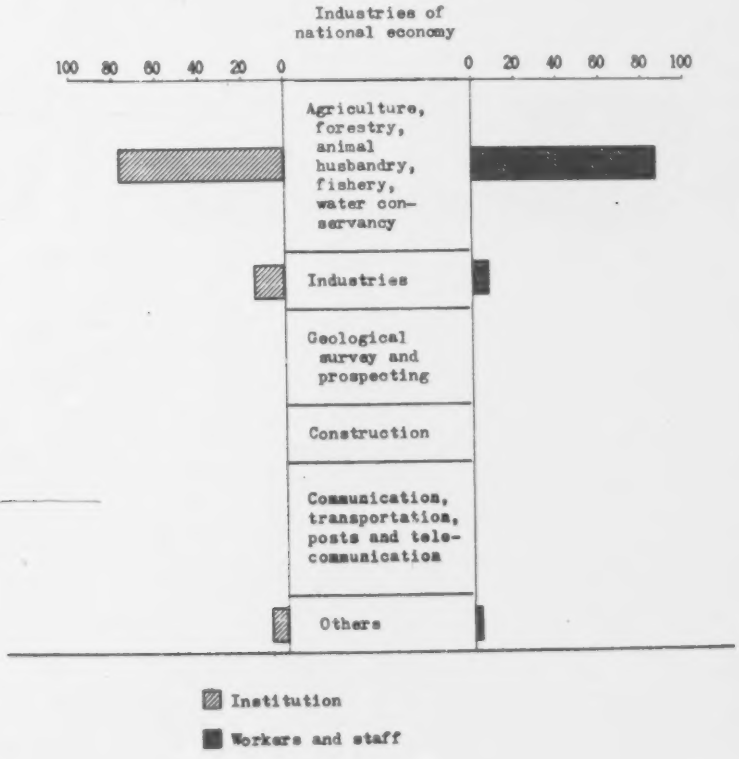
1 Exploration and assessment of the earth, the seas and the atmosphere
2 Civil space
3 Development of agriculture, forestry and fishing
4 Promotion of industrial development
5 Production, conservation and distribution of energy
6 Development of transport and communication
7 Development of education services
8 Development of health services
9 Social development and socio-economic services
10 Protection of the environment
11 General advancement of knowledge
12 Other aims
13 Defence

III. R&D institutions subordinate to government departments at the county level and their personnel

There are in all 3,267 R&D institutions subordinate to governments at the county level, employing 77,000 workers and staff and mostly serving for the agriculture, forestry, animal husbandry, fishery and water conservancy (Fig. III-1, Table III-1).

The average scale of personnel of these institutions is relatively small. In the southwest district and the north district of China, it is of the smallest, averaging 13 person only (Table III-2).

Fig. III-1 Distribution by industries of national economy (%)

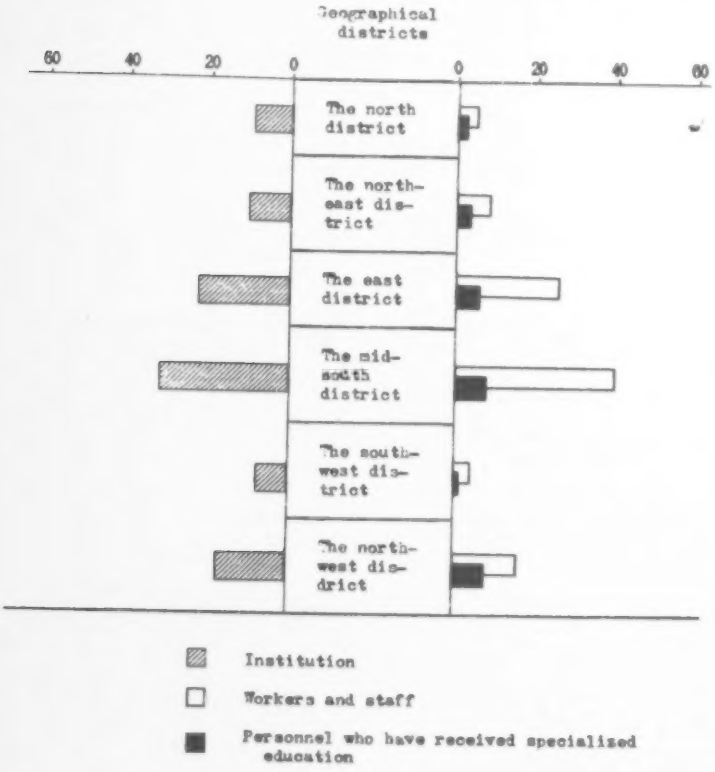


III. R&D institutions subordinate to government departments at the county level and their personnel

The number of R&D institutions and their workers and staff in the mid-south district tops the country, while that in the southwest district is the least (Fig. III-2, Table III-2).

The proportion of the personnel who have received the specialized technical education (that is, personnel possessing the cultural level of specialized secondary school or higher education) is relatively small. In the northwest district where the proportion is the highest it is 50%, while in the mid-south district and the east district where the proportion is relative lower it is only about 20% (Table III-2).

Fig. III-2 Distribution by geographical districts (%)



III. R&D institutions subordinate to government departments at the county level and their personnel

Table III-1 Distribution by industries of national economy

	Number of institutions	Number of workers and staff (person)
Total	3267	77435
Agriculture, forestry, animal husbandry, fishery, water conservancy	2524	67782
Industries	469	6268
Geological survey and prospecting	3	15
Construction	12	280
Communication, transport, posts and telecommunication	4	60
Others	255	3030

Table III-2 Distribution by geographical districts

	Total number of institutions	Total number of workers and staff (person)	Total number of personnel possessing specialized secondary school or higher cultural level			
			University or higher	Specialized high school	Specialized secondary school	Others
			(person)			
Total	3267	77435	4961	3876	13405	55193
The north district	307	4010	392	381	1093	2144
The northeast district	341	6548	732	521	1443	3852
The east district	741	20048	1288	828	2387	15545
The mid-south district	1055	30984	1295	1164	3562	24963
The southwest district	256	3343	289	169	542	2343
The northwest district	567	12502	965	813	4378	6346

中华人民共和国国家科学技术委员会
机 构 图 表
ORGANIZATIONAL CHART
THE STATE SCIENCE AND TECHNOLOGY COMMISSION
THE PEOPLE'S REPUBLIC OF CHINA